

|                |   |     |
|----------------|---|-----|
| ANIGMATURE     | A S R N Q S S C D T V D Q G Y Q C F S E T S H L W G O Y A P F F S L A N E S V I S P E V P A G C R M     | 50  |
| AFUMMATURE     | . . . . S X S C D T V D L G Y Q C S P A T S H L W G O Y S P F F S L E D E L S V S S K L P K D C R I     | 46  |
| ATERRCBSMATURE | . . . . S D C T S V D R G Y Q C F P E L S H K W G L Y A P M F F S L Q D E S P F P L D V P D D C H I     | 45  |
| ANIGMATURE     | T F A O V L S R H G A R Y P T D S K K Y S A L I E E I Q O N A T T F D G K Y A F L K T Y N Y S L         | 100 |
| AFUMMATURE     | T D V Q V L S R H G A R Y P T S S K S K K Y K L V T A I Q A N A T D F K G K E A F L K T Y N Y T L       | 96  |
| ATERRCBSMATURE | T F V Q V L A R H G A R S P T D S K T K A Y A A T I A A I Q K N A T A F P G K Y A F L K S Y N Y S M     | 95  |
| ANIGMATURE     | G A D D L T P F G E Q E L V N S G I K F Y Q R Y E S L T R N I V P F I R S S G S S R V I A S G K K F     | 0   |
| AFUMMATURE     | G A D D L T P F G E Q Q L V N S G I K F Y Q R Y K A L A R S V V P F I R A S G S D R V I A S G E K F     | 146 |
| ATERRCBSMATURE | G S E N L T P F G R N Q L Q D L G A Q F Y R R Y D T L T R H I N P F V R A A D S S R V H E S A E K F     | 145 |
| ANIGMATURE     | I E G F Q S T K L K D P R A Q P G Q S S P K I D V V I S E A S S N N T L D P G T C T V F E D S E L       | 200 |
| AFUMMATURE     | I E G F Q Q A K L A D P P G A : T N R A A P A I S V T I P E S E T F N N T L D H G V C T K F E A S O L   | 195 |
| ATERRCBSMATURE | V E G F Q N A R I Q G D P H A N P H Q P S P R V D V V I P E G T A Y N N T L E H S I C T A F E A S T V   | 195 |
| ANIGMATURE     | A D T V E A N F T A T F V P S I R Q R L E N D L S G V T L T D T E V T Y L M D M C S F D T T S T         | 250 |
| AFUMMATURE     | G D E V A A N F T A L F A P D I R A R A E K H L P G V T L T D E D V V S L M D M C S F D T V A R T S     | 245 |
| ATERRCBSMATURE | G D A A A D N F T A V F A P A I A K R L E A D L P G V Q L S A D D V V N L M A M C P F E T V S L T D     | 245 |
| ANIGMATURE     | V D T K L S P F C D L F T H D E W I N Y D Y L Q S L K K Y Y G C H G A G N P L G P T Q C V G Y I A N E L | 300 |
| AFUMMATURE     | D A S Q L S P F C Q L F T H N E W K K Y N Y L O S L G K Y Y G Y G A G N P L G P A Q C I G F T N E L     | 295 |
| ATERRCBSMATURE | D A H T L S P F C D L F T A A E W T Q Y N Y L L S L D K Y Y G Y G G G N P L G P V Q C V G W A N E L     | 295 |
| ANIGMATURE     | I A R L T H S P V H D D T S S N H T L D S S P A T F P P L N S T L Y A D F S H D N G I T S I I F A L G   | 350 |
| AFUMMATURE     | I A R L T R S P V Q D H T S T N S T L V S N P A T F P P L N A T M Y V D F S H D N S M V S I F F A L G   | 345 |
| ATERRCBSMATURE | I A R L T R S P V H D H T C V N N T L D A N P A T F P P L N A T L Y A D F S H D S N L V S I F F A L G   | 345 |
| ANIGMATURE     | L Y N G T K P L S T T T V E N I T Q T D G F S S A W T V P F A S R L Y V E M M Q C Q A E Q E P L V R     | 400 |
| AFUMMATURE     | L Y N G T E P L S R T S V E S A K E L D G Y S A S W V V P F G A R A Y F E T M Q C K S E K E P L V R     | 395 |
| ATERRCBSMATURE | L Y N G T K P L S Q T T V E D I T R T D G Y A A A W T V P F A R A Y I E M M Q C R A E K Q P L V R       | 395 |
| ANIGMATURE     | V L V N D R V V P L H G C P V D A L G R C T R D S F V R G L S F A R S G G D W A E C F A                 | 444 |
| AFUMMATURE     | A L I N D R V V P L H G C D V D K L G R C K L N D F V K G L S W A R S G G N W G E C F S                 | 439 |
| ATERRCBSMATURE | V L V N D R V M P L H G C A V D N L G R C K R D D F V E G L S F A R A G G N W A E C F .                 | 438 |

FIG. 1

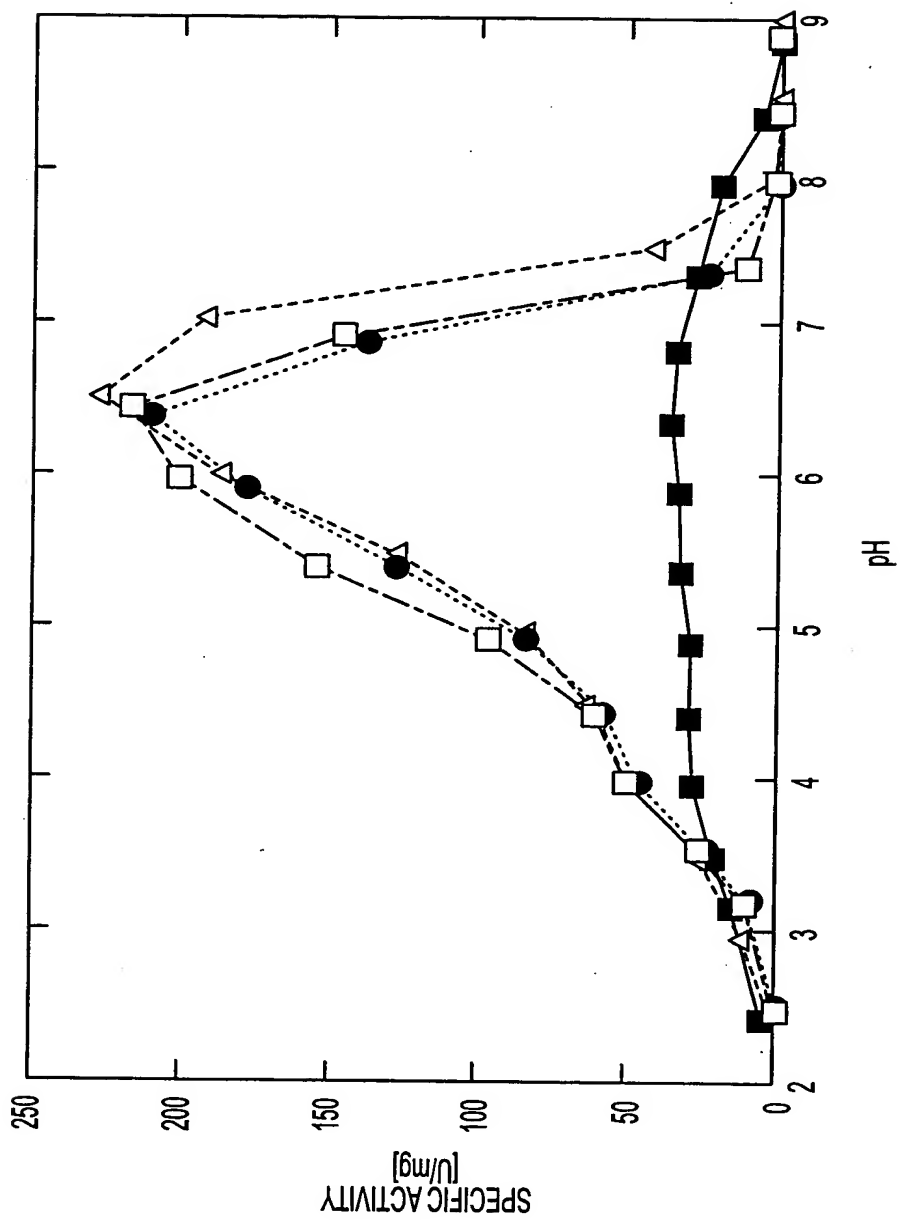


FIG. 2

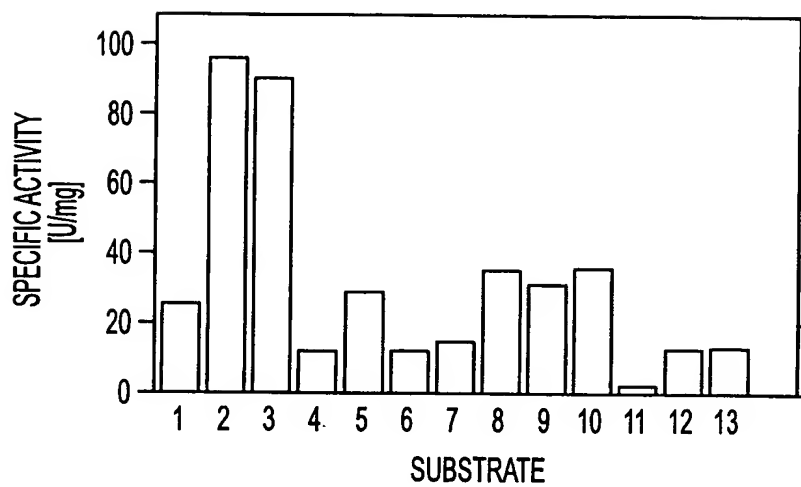


FIG. 3A

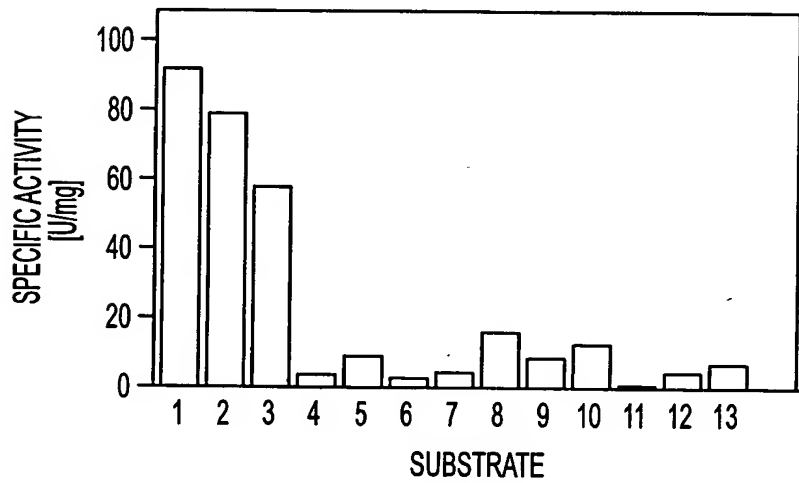


FIG. 3B

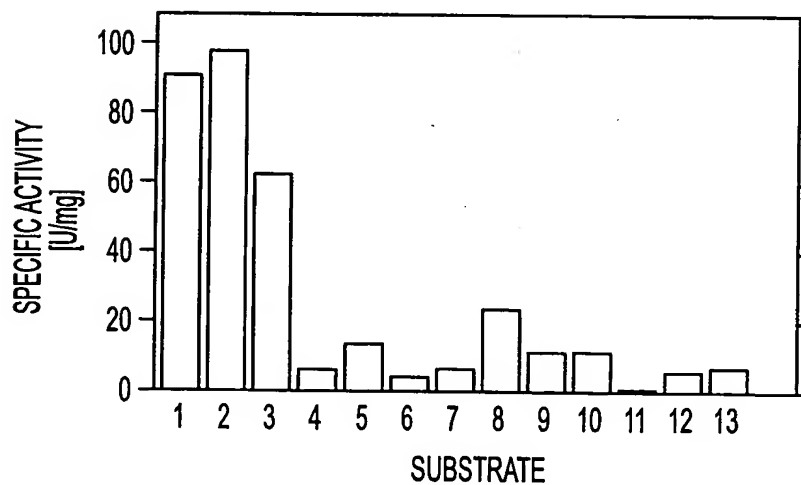


FIG. 3C

|     |   |     |
|-----|---|-----|
| 1   | TCTGTAACCGATAGCGGACCGACTAGGCATCGTTGATCCACAATATCTCA  | 50  |
| 51  | GACAATGCAACTCAGTCGAATATGAAGGGCTACAGCCAGCATTAAATAC   | 100 |
| 101 | GGCCGTCTAGGTCGGGCTCCGGGGATGAGGAGGAGCAGGCTCGTGTTCA   | 150 |
| 151 | TTCGGTCATGGCTTTTTTTCACGGTCGCTCTTTCGCTTTATTACTTGCTAT | 200 |
|     | M A F F T V A L S L Y Y L L S                       | 15  |
| 201 | CGAGgtgagatctctacaatatctgtctgcttagttgaattgggtacttat | 250 |
|     | R   | 16  |
| 251 | ctgtacagAGTCTCTGCTCAGCCCCAGTGGTCCAGAATCATTATGCAA    | 300 |
|     | V S A Q A P V V Q N H S C N                         | 30  |
|     | +   |     |
| 301 | TACGGCGGACGGTGGATATCAATGCTTCCCAATGTCTCTCATGTTTGGG   | 350 |
|     | T A D G G Y Q C F P N V S H V W G                   | 47  |
|     | +   |     |
| 351 | GTCAGTACTCGCCGTACTTCTCCATCGAGCAGGAGTCAGCTATCTCTGAG  | 400 |
|     | Q Y S P Y F S I E Q E S A I S E                     | 63  |
| 401 | GACGTGCCTCATGGCTGTGAGGTTACCTTTGTGCAGGTGCTCTCGCGGCA  | 450 |
|     | D V P H G C E V T F V Q V L S R H                   | 80  |
| 451 | TGGGGCTAGGTATCCGACAGAGTCGAAGAGTAAGGCGTACTCGGGGTGA   | 500 |
|     | G A R Y P T E S K S K A Y S G L I                   | 97  |
| 501 | TTGAAGCAATCCAGAAGAATGCTACCTCTTTTGGGGACAGTATGCTTTT   | 550 |
|     | E A I Q K N A T S F W G Q Y A F                     | 113 |
|     | +   |     |
| 551 | CTGGAGAGTTATAACTATACCCTCGGCGCGGATGACTTGACTATCTTCGG  | 600 |
|     | L E S Y N Y T L G A D D L T I F G                   | 130 |
|     | +   |     |
| 601 | CGAGAACCAGATGGTTGATTCTGGGTGCCAAGTCTACCGACGGTATAAGA  | 650 |
|     | E N Q M V D S G A K F Y R R Y K N                   | 147 |
| 651 | ATCTCGCCAGGAAAAATACTCTTTTATCCGTGCATCAGGGTCTGACCGT   | 700 |
|     | L A R K N T P F I R A S G S D R                     | 163 |

FIG. 4-1

701 GTCGTTGCGTCTGCGGAGAAGTTCATTAATGGATTTCGCAAGGCTCAGCT 750  
V V A S A E K F I N G F R K A Q L 180

751 CCACGACCATGGCTCCAAACGTGCTACGCCAGTTGTCAATGTGATTATCC 800  
H D H G S K R A T P V V N V I I P 197

801 CTGAAATCGATGGGTTTAAACAACACCCTGGACCATAGCACGTGCGTATCT 850  
E I D G F N N T L D H S T C V S 213  
+

851 TTTGAGAATGATGAGCGGGCGGATGAAATTGAAGCCAATTCACGGCAAT 900  
F E N D E R A D E I E A N F T A I 230  
+

901 TATGGGACCTCCGATCCGCAACGTCTGGAAAATGACCTCCCTGGCATCA 950  
M G P P I R K R L E N D L P G I K 247

951 AACTTACAAACGAGAATGTAAATATATTGATGGATATGTGCTCTTTCGAC 1000  
L T N E N V I Y L M D M C S F D 263

1001 ACCATGGCGCGCACCGCCACGGAACCGAGCTGTCTCCATTTTGTGCCAT 1050  
T M A R T A H G T E L S P F C A I 280

1051 CTTCACTGAAAAGGAGTGGCTGCAGTACGACTACCTTCAATCTCTATCAA 1100  
F T E K E W L Q Y D Y L Q S L S K 297

1101 AGTACTACGGCTACGGTGCCGGAAGCCCCCTTGGCCCAGCTCAGGGAATT 1150  
Y Y G Y G A G S P L G P A Q G I 313

1151 GGCTTACCAACGAGCTGATTGCCCGACTAACGCAATCGCCCGTCCAGGA 1200  
G F T N E L I A R L T Q S P V Q D 330

1201 CAACACAAGCACCAACCACACTCTAGACTCGAACCCAGCCACATTTCCGC 1250  
N T S T N H T L D S N P A T F P L 347  
+ +

1251 TCGACAGGAAGCTCTACGCCGACTTCTCCCACGACAATAGCATGATATCG 1300  
D R K L Y A D F S H D N S M I S 363

1301 ATATTCTTCGCCATGGGTCTGTACAACGGCACCCAGCCGCTGTCAATGGA 1350  
I F F A M G L Y N G T Q P L S M D 380  
+

FIG. 4-2

|      |   |      |
|------|---|------|
| 1351 | TTCCGTGGAGTCGATCCAGGAGATGGACGGTTACGCGGCGTCTTGGA   | 1400 |
|      | S V E S I Q E M D G Y A A S W T V                 | 397  |
| 1401 | TTCCGTTTGGTGGGAGGGCTTACTTTGAGCTCATGCAGTGCAGAGAAG  | 1450 |
|      | P F G A R A Y F E L M Q C E K K                   | 413  |
| 1451 | GAGCCGCTTGTGCGGGTATTAGTGAATGATCGCGTTGTTCTCTTCATG  | 1500 |
|      | E P L V R V L V N D R V V P L H G                 | 430  |
| 1501 | CTGCGCAGTTGACAAGTTTGGACGGTGCACTTTGGACGATTGGGTAGAG | 1550 |
|      | C A V D K F G R C T L D D W V E G                 | 447  |
| 1551 | GCTTGAATTTTGCAAGGAGCGCGGAACGGAAGACTTGTTTTACCTA    | 1600 |
|      | L N F A R S G G N W K T C F T L                   | 463  |
| 1601 | TAAAGGCGTTTGCTCATTATAGTGTGTGCAGGTATAGGAAGGTTAG    | 1650 |
| 1651 | GGAATTAGCTGTTTGGCTTTACTCTTATTAGACCAAGAATGATTGTTT  | 1700 |
| 1701 | TTCTCAAGGCTTCTAGCATATCGTCAAGTGGGATAAATCACCTATCCTC | 1750 |
| 1751 | CATGTGTAGGTGAACCGCTCTTGCATCAACCTCTTGTGTTTCAGAGTAG | 1800 |
| 1801 | TTTACCAAACATATCCTCGTGTCTCTTCTGCTCTTCCGGTCTCATAT   | 1850 |
| 1851 | TACACTGTCTCTATCTATATCGTCAACAAACTACCACCAAACACCA    | 1900 |
| 1901 | ATGTCACACTTTCCAGCACGAAATTTCTTCG                   | 1931 |

FIG. 4-3

|     |   |     |
|-----|---|-----|
| 1   | TTCCACGCTGAAAGCCTGACTGCGATTTCCAAGCTGCATGCAGGCTGCTC  | 50  |
| 51  | AACTGCCTGCTTATCTTCATCAGACGCAGATACACAACCTGGTCTGTAGA  | 100 |
| 101 | TGCACCCATGACGGACGAACGCACCGCTCTCTTGGCCTCCAGGGACCCGG  | 150 |
| 151 | AGGTCGAGGGCGATGAGGTGCGCCCTCGACGGCCTCCCAGTCCCTGTTG   | 200 |
| 201 | CAGTTGAGATCTCGCTGCGAACGTGACCGCAGATATGGTTGTCTTCGAC   | 250 |
| 251 | GTTTTCTCGCCTTCGAGGAAGAATTGCTGCTGTGACGATGAGTCTGTTGT  | 300 |
|     | M S L L L   | 5   |
| 301 | TGCTGGTGCTGTCCGGCGGGTTGGTCGCGTTATAgatgctccttctctc   | 350 |
|     | L V L S G G L V A L Y                               | 16  |
| 351 | tggtcatattgttttctgctaacgttctcataattgaagTGTCTCAAGAA  | 400 |
|     | V S R N   | 20  |
| 401 | ATCCGCATGTTGATAGCCACTCTTGCAATAACAGTGAAGGAGGGTATCAG  | 450 |
|     | P H V D S H S C N T V E G G Y Q                     | 36  |
| 451 | TGTCGTCCAGAAATCTCCCACTCCTGGGGCCAGTATTCTCCATTCTTCTC  | 500 |
|     | C R P E I S H S W G Q Y S P F F S                   | 53  |
| 501 | CCTGGCAGACCAGTCGGAGATCTCGCCAGATGTCCACAGAACTGCAAGA   | 550 |
|     | L A D Q S E I S P D V P Q N C K I                   | 70  |
| 551 | TTACGTTTGTCCAGCTGCTTTCTCGTCACGGCGCTAGATAACCCTACGTCT | 600 |
|     | T F V Q L L S R H G A R Y P T S                     | 86  |
| 601 | TCCAAGACGGAGCTGTATTTCGAGCTGATCAGTCGGATTGAGAAGACGGC  | 650 |
|     | S K T E L Y S Q L I S R I Q K T A                   | 103 |
| 651 | GACTGCGTACAAAGGCTACTATGCCTTCTTGAAAGACTACAGATACCAGC  | 700 |
|     | T A Y K G Y Y A F L K D Y R Y Q L                   | 120 |
| 701 | TGGGAGCGAACGACCTGACGCCCTTTGGGGAAAACCAGATGATCCAGTTG  | 750 |
|     | G A N D L T P F G E N Q M I Q L                     | 136 |

FIG. 5-1

751 GGCATCAAGT<sup>•</sup>TTTATAACC<sup>•</sup>ATTACAAGAGT<sup>•</sup>CTCGCCAGGA<sup>•</sup>ATGCCGTCC<sup>•</sup> 800  
 G I K F Y N H Y K S L A R N A V P 153

801 ATTCGTTCGT<sup>•</sup>TGCTCCGGCT<sup>•</sup>CTGATCGGGT<sup>•</sup>CATTGCCTCGGGGAGACTT<sup>•</sup> 850  
 F V R C S G S D R V I A S G R L F 170

851 TCATCGAAGG<sup>•</sup>TTTCCAGAG<sup>•</sup>CGCCAAAGTG<sup>•</sup>CTGGATCCTC<sup>•</sup>ATTAGACAAG<sup>•</sup> 900  
 I E G F Q S A K V L D P H S D K 186

901 CATGACGCT<sup>•</sup>CCTCCACGAT<sup>•</sup>CAACGTGAT<sup>•</sup>CATCGAGGAGGGTCCGTCT<sup>•</sup> 950  
 H D A P P T I N V I I E E G P S Y 203

951 CAATAACACG<sup>•</sup>CTCGACACC<sup>•</sup>GGCAGCTGTCCAGTCTTTGAGGACAGCAGC<sup>•</sup> 1000  
 N N T L D T G S C P V F E D S S G 220  
 +

1001 GGGGACATG<sup>•</sup>ACGCACAGGA<sup>•</sup>AAAGTTGCA<sup>•</sup>AAAGCAATTGCG<sup>•</sup>ACCAGCTAT<sup>•</sup>C 1050  
 G H D A Q E K F A K Q F A P A I 236

1051 CTGGAAAAG<sup>•</sup>ATCAAGGACC<sup>•</sup>ATCTTCCCGGCGTGGACCTGGCCGTGTGCGA<sup>•</sup> 1100  
 L E K I K D H L P G V D L A V S D 253

1101 TGTACCGTACT<sup>•</sup>TGATGGACT<sup>•</sup>TGTGTCCGTT<sup>•</sup>TGAGACCTTGGCTCGCAAC<sup>•</sup> 1150  
 V P Y L M D L C P F E T L A R N H 270  
 +

1151 ACACAGACACGCTGTCTCCGTTCTGCGCTCTTTCCACGCAAGAGGAGTGG 1200  
T D T L S P F C A L S T Q E E W 286

1201 CAAGCATATGACTACTACC<sup>•</sup>AAAGTCTGGGGAAATACTATGGCAATGGCGG 1250  
Q A Y D Y Y Q S L G K Y Y G N G G 303

1251 GGGTAACCCGT<sup>•</sup>TGGGGCCAG<sup>•</sup>CCCAAGGCGTGGGGTTTGTCAACGAGTTG<sup>•</sup> 1300  
 G N P L G P A Q G V G F V N E L I 320

1301 TTGCTCGCAT<sup>•</sup>GACCCATAG<sup>•</sup>CCCTGTCCAGGACTACACCA<sup>•</sup>CGGTCAACC<sup>•</sup> 1350  
 A R M T H S P V Q D Y T T V N H 336  
 +

1351 ACTCTTGACT<sup>•</sup>CGAATCCGG<sup>•</sup>CGACATTCCCTTTGAACGCG<sup>•</sup>ACGCTGTACG<sup>•</sup> 1400  
 T L D S N P A T F P L N A T L Y A 353  
 +

FIG. 5-2



|      |   |      |
|------|---|------|
| 1401 | AGATTTTCAGCCACGACAACACAATGACGTCAATTTTCGCGGCCTTGGGCC | 1450 |
|      | D F S H D N T M T S I F A A L G L                   | 370  |
| 1451 | TGTACAACGGGACCGCGAAGCTGTCCACGACCGAGATCAAGTCCATTGAA  | 1500 |
|      | Y N G T A K L S T T E I K S I E                     | 386  |
|      | +   |      |
| 1501 | GAGACGGACGGCTACTCGGCGGCGTGGACCGTTCCGTTCTGGGGGCGAGC  | 1550 |
|      | E T D G Y S A A W T V P F G G R A                   | 403  |
| 1551 | CTATATCGAGATGATGCAGTGTGATGATTCGGATGAGCCAGTCGTTCTGGG | 1600 |
|      | Y I E M M Q C D D S D E P V V R V                   | 420  |
| 1601 | TGCTGGTCAACGACCGGGTGGTGCCACTGCATGGCTGCGAGGTGGACTCC  | 1650 |
|      | L V N D R V V P L H G C E V D S                     | 436  |
| 1651 | CTGGGGCGATGCAAACGAGACGACTTTGTCAGGGGACTGAGTTTTCGCGC  | 1700 |
|      | L G R C K R D D F V R G L S F A R                   | 453  |
| 1701 | ACAGGGTGGGAACCTGGGAGGGGTGTTACGCTGCTTCTGAGTAGGTTTATT | 1750 |
|      | Q G G N W E G C Y A A S E *                         | 466  |
| 1751 | CAGCGAGTTTCGACCTTCTATCCTTCAAACACTGCACAAAGACACACTG   | 1800 |
| 1801 | CATGAAATGGTAACAGGCCTGGAGCGTTTATAGAAGGAAAAAAGTT      | 1845 |

FIG. 5-3

|     |  |     |
|-----|--|-----|
| 1   | AGATTCAACGACGGAGGAATCGCAACCCTAATTGTCGGTATCATGGTGAC | 50  |
|     | M V T  | 3   |
| 51  | TCTGACTTTCCTGCTTTCGGCGGCGTATCTGCTTTCGggtagtggtt    | 100 |
|     | L T F L L S A A Y L L S G                          | 16  |
| 101 | ggatctattgctcggatagggctgtggtgctgattctgaaacggagTAGA | 150 |
|     | R  | 17  |
| 151 | GTGTCTGCGGCACCTAGTTCTGCTGGCTCCAAGTCTGCGATACGGTAGA  | 200 |
|     | V S A A P S S A G S K S C D T V D                  | 34  |
| 201 | CCTCGGGTACAGTGCTCCCCTGCGACTTCTCATCTATGGGGCCAGTACT  | 250 |
|     | L G Y Q C S P A T S H L W G Q Y S                  | 51  |
| 251 | CGCCATTCTTTTCGCTCGAGGACGAGCTGTCGTCGAGTAAGCTTCCC    | 300 |
|     | P F F S L E D E L S V S S K L P                    | 67  |
| 301 | AAGGATTGCCGGATCACCTTGGTACAGGTGCTATCGCGCCATGGAGCGCG | 350 |
|     | K D C R I T L V Q V L S R H G A R                  | 84  |
| 351 | GTACCCAACCAGCTCCAAGAGCAAAAAGTATAAGAAGCTTGTGACGGCGA | 400 |
|     | Y P T S S K S K K Y K K L V T A I                  | 101 |
| 401 | TCCAGGCCAATGCCACCGACTTCAAGGGCAAGTTGCCTTTTGAAGACG   | 450 |
|     | Q A N A T D F K G K F A F L K T                    | 117 |
|     | +  |     |
| 451 | TACAACTATACTCTGGGTGCGGATGACCTCACTCCCTTTGGGGAGCAGCA | 500 |
|     | Y N Y T L G A D D L T P F G E Q Q                  | 134 |
|     | +  |     |
| 501 | GCTGGTGAACTCGGGCATCAAGTTCTACCAGAGGTACAAGGCTCTGGCGC | 550 |
|     | L V N S G I K F Y Q R Y K A L A R                  | 151 |
| 551 | GCAGTGTGGTGCCGTTTATTCGCGCCTCAGGCTCGGACCGGGTTATTGCT | 600 |
|     | S V V P F I R A S G S D R V I A                    | 167 |

FIG. 6-1

|      |  |      |
|------|--|------|
| 601  | TCGGGAGAGAAGTTCATCGAGGGGTTCAGCAGGCGAAGCTGGCTGATCC    | 650  |
|      | S G E K F I E G F Q Q A K L A D P                    | 184  |
| 651  | TGGCGCGACGAACCGCGCCGCTCCGGCGATTAGTGTGATTATCCGGAGA    | 700  |
|      | G A T N R A A P A I S V I I P E S                    | 201  |
| 701  | GCGAGACGTTCACAATACGCTGGACCACGGTGTGTGCACGAAGTTTGAG    | 750  |
|      | E T F N N T L D H G V C T K F E                      | 217  |
|      | +  |      |
| 751  | GCGAGTCAGCTGGGAGATGAGGTTGCGGCCAATTTCACTGCGCTCTTGC    | 800  |
|      | A S Q L G D E V A A N F T A L F A                    | 234  |
|      | +  |      |
| 801  | ACCCGACATCCGAGCTCGCGCCGAGAAGCATCTTCCTGGCGTGACGCTGA   | 850  |
|      | P D I R A R A E K H L P G V T L T                    | 251  |
| 851  | CAGACGAGGACGTTGTCTAGTCTAATGGACATGTGTTTCGTTTGATACGGTA | 900  |
|      | D E D V V S L M D M C S F D T V                      | 267  |
| 901  | GCGCGCACCAGCGACGCAAGTCAGCTGTCACCGTTCTGTCAACTCTTCAC   | 950  |
|      | A R T S D A S Q L S P F C Q L F T                    | 284  |
| 951  | TCACAATGAGTGAAGAAGTACAACCTTCAGTCCTTGGGCAAGTACT       | 1000 |
|      | H N E W K K Y N Y L Q S L G K Y Y                    | 301  |
| 1001 | ACGGCTACGGCGCAGGCAACCCTCTGGGAACGGCTCAGGGGATAGGGTTC   | 1050 |
|      | G Y G A G N P L G P A Q G I G F                      | 317  |
| 1051 | ACCAACGAGCTGATTGCCCAGTTGACTCGTTCGCCAGTGCAGGACCACAC   | 1100 |
|      | T N E L I A R L T R S P V Q D H T                    | 334  |
| 1101 | CAGCACTAACTCGACTCTAGTCTCCAACCCGGCCACCTTCCCGTTGAACG   | 1150 |
|      | S T N S T L V S N P A T F P L N A                    | 351  |
|      | +  | +    |
| 1151 | CTACCATGTACGTCGACTTTTCACACGACAACAGCATGGTTTCCATCTTC   | 1200 |
|      | T M Y V D F S H D N S M V S I F                      | 367  |
| 1201 | TTTGATGGGCTGTACAACGGCACTGAACCCTTGTCCTGGACCTCGGT      | 1250 |
|      | F A L G L Y N G T E P L S R T S V                    | 384  |
|      | +  |      |

FIG. 6-2

1251 GGAAAGCGCC<sup>˙</sup>AAGGAATTGGATGGGTATTCTGCATCCTGGGTGGTGCCTT<sup>˙</sup> 1300  
E S A K E L D G Y S A S W V V P F 401

1301 TCGGCGCGC<sup>˙</sup>GAGCCTACTTCGAGACGATGCAATGCAAGT<sup>˙</sup>CGGAAAAGGAG<sup>˙</sup> 1350  
G A R A Y F E T M Q C K S E K E 417

1351 CCTCTTGTT<sup>˙</sup>CGCGCTTTGATTAATGACCGGGTTGTGCCA<sup>˙</sup>CTGCATGGCTG<sup>˙</sup> 1400  
P L V R A L I N D R V V P L H G C 434

1401 CGATGTGGAC<sup>˙</sup>AAGCTGGGGCGATGCAAGCTGAATGACTTTGTCAAGGGAT<sup>˙</sup> 1450  
D V D K L G R C K L N D F V K G L 451

1451 TGAGTTGGG<sup>˙</sup>CAGATCTGGGGGCAACTGGGGAGAGTGCTTTAGTTGAGAT<sup>˙</sup> 1500  
S W A R S G G N W G E C F S \* 465

1501 GTCATTGTTATGCTATACT<sup>˙</sup>CCAATAGACCGTTGCTTAGCCATTCACTTCA<sup>˙</sup> 1550

1551 CTTTGCTCGA<sup>˙</sup>ACCGCCTGCCG 1571

FIG. 6-3

|     |   |            |
|-----|---|------------|
| 1   | ACGTCACAGGTCGGGACTACATCCGCTATGTGGTCCTCTACTTCGTCGG   | 50         |
| 51  | AAGAATATACTGTCTCTTGTGGCTACCATGGGGGTTTTCGTCGTTCTATT<br>M G V F V V L L                       | 100<br>8   |
| 101 | ATCTATCGCGACTCTGTTCGGCAGgtatgtgcaccgctctaggttcaact<br>S I A T L F G S                       | 150<br>16  |
| 151 | cgcctggtaactgacaaacagcacagCACATCGGGCACTGGCGTGGGCC<br>T S G T A L G P                        | 200<br>24  |
| 201 | CCGTGGAAATCACAGCGACTGCACCTCAGTCGACCGGGGTATCAATGCT<br>R G N H S D C T S V D R G Y Q C F<br>+ | 250<br>41  |
| 251 | TCCCTGAGCTCTCCATAAATGGGGTCTCTACGCGCCCTATTCTCCCTC<br>P E L S H K W G L Y A P Y F S L         | 300<br>57  |
| 301 | CAGGATGAATCTCCGTTTCTCTGGACGTCCCGATGACTGCCACATCAC<br>Q D E S P F P L D V P D D C H I T       | 350<br>74  |
| 351 | CTTTGTGCAAGTGCTGGCCCAGCATGGAGCGCGGTCTCCAACCGATAGCA<br>F V Q V L A R H G A R S P T D S K     | 400<br>91  |
| 401 | AGACAAAGGCGTATGCCGCGACTATTGCAGCCATCCAGAAGAATGCCACC<br>T K A Y A A T I A A I Q K N A T<br>+  | 450<br>107 |
| 451 | GCGTTGCCGGGCAAATACGCCTTCTGAAGTCGTACAATTACTCCATGGG<br>A L P G K Y A F L K S Y N Y S M G<br>+ | 500<br>124 |
| 501 | CTCCGAGAACCTGAACCCCTTCGGGCGGAACCAACTGCAAGATCTGGGCG<br>S E N L N P F G R N Q L Q D L G A     | 550<br>141 |
| 551 | CCCAGTTCTACCGTCGCTACGACACCCTCACC CGGCACATCAACCCTTTC<br>Q F Y R R Y D T L T R H I N P F      | 600<br>157 |
| 601 | GTCCGGGCGCGGATTCTCTCCGCGTCCAAGAATCAGCCGAGAAGTTCGT<br>V R A A D S S R V H E S A E K F V      | 650<br>174 |

FIG. 7-1

|      |  |      |
|------|--|------|
| 651  | CGAGGGCTTCCAAAACGCCCGCCAAGGCGATCCTCACGCCAACCCCTCACC        | 700  |
|      | E G F Q N A R Q G D P H A N P H Q                          | 191  |
| 701  | AGCCGTCGCCCGCGCGTGGATGTAGTCATCCCCGAAGGCACCGCTACAAC         | 750  |
|      | P S P R V D V V I P E G T A Y N                            | 207  |
|      | +  |      |
| 751  | AACACGCTCGAGCACAGCATCTGCACCGCCTTCGAGGCCAGCACCGTCGG         | 800  |
|      | N T L E H S I C T A F E A S T V G                          | 224  |
| 801  | CGACGCCCGCGGCAGACAACCTTCACTGCCGTGTTCGCGCCGGCGATCGCCA       | 850  |
|      | D A A A D N F T A V F A P A I A K                          | 241  |
|      | +  |      |
| 851  | AGCGTCTGGAGGCCGATCTGCCCGCGTGCAGCTGTCCGCCGACGACGTG          | 900  |
|      | R L E A D L P G V Q L S A D D V                            | 257  |
| 901  | GTCAATCTGATGGCCATGTGTCCGTTTCGAGACGGTCAGCCTGACCGACGA        | 950  |
|      | V N L M A M C P F E T V S L T D D                          | 274  |
| 951  | <u>CGCGCACACGCTGTGCGCGTTCTGCGACCTCTTCACCGCCGCCGAGTGG</u>   | 1000 |
|      | A H T L S P F C D L F T A A E W T                          | 291  |
| 1001 | <u>CGCAGTACAACCTACCTGCTCTCGCTGGACAAGTACTACGGCTACGGCGGC</u> | 1050 |
|      | Q Y N Y L L S L D K Y Y G Y G G                            | 307  |
| 1051 | GGCAATCCGCTGGGCCCCGTGCAGGGCGTGGGCTGGGCGAACGAGCTGAT         | 1100 |
|      | G N P L G P V Q G V G W A N E L I                          | 324  |
| 1101 | CGCGCGGCTGACGCGCTCCCCCGTCCACGACCACACCTGCGTCAACAAC          | 1150 |
|      | A R L T R S P V H D H T C V N N T                          | 341  |
|      | +  |      |
| 1151 | CCCTCGACGCCAACCCGGCCACCTTCCCGCTGAACGCCACCTCTACGCG          | 1200 |
|      | L D A N P A T F P L N A T L Y A                            | 357  |
|      | +  |      |
| 1201 | <u>GACTTTTCGCACGACAGTAACCTGGTGTGATCTTCTGGGCGCTGGGTCT</u>   | 1250 |
|      | D F S H D S N L V S I F W A L G L                          | 374  |

FIG. 7-2

|      |   |      |
|------|---|------|
| 1251 | <u>GTACAACGGC</u> <u>ACCAAGCCCCTGTCGCAGACCACCGTGGAGGATATCACCC</u> | 1300 |
|      | Y N G T K P L S Q T T V E D I T R                                 | 391  |
|      | +   |      |
| 1301 | <u>GGACGGACGGGTACGCGGCCCTGGACGGTGCCGTTTGCCGCCCCGCGCC</u>          | 1350 |
|      | T D G Y A A A W T V P F A A R A                                   | 407  |
| 1351 | <u>TACATCGAGATGATGCAGTGTGCGCGGAGAAGCAGCCGCTGGTGCGCGT</u>          | 1400 |
|      | Y I E M M Q C R A E K Q P L V R V                                 | 424  |
| 1401 | <u>GCTGGTCAACGACCGTGTCA</u> <u>TGCCGCTGCACGGCTGCGCGGTGGATAATC</u> | 1450 |
|      | L V N D R V M P L H G C A V D N L                                 | 441  |
| 1451 | <u>TGGGCAGGTGTAAACGGGACGACTTTGTGGAGGGACTGAGCTTTGCGCGG</u>         | 1500 |
|      | G R C K R D D F V E G L S F A R                                   | 457  |
| 1501 | <u>GCAGGAGGGAACTGGGCCGAGTGT</u> <u>TTCTGATGTACATGCTGTAGTTAGCT</u> | 1550 |
|      | A G G N W A E C F *   | 466  |
| 1551 | TTGAGTCCTGAGGTACC   | 1567 |

FIG. 7-3

|           |  |         |
|-----------|--|---------|
| HEADER    | PHOSOHOMONOESTERASE  | 1DIK 1  |
| COMPND    | PHYTASE (E.C.3.1.3.8)                                      | 1DIK 2  |
| SOURCE    | (Aspergillus ficuum)                                       | 1DIK 3  |
| REMARK 2  | RESOLUTION. 2.5 ANGSTROMS.                                 | 1DIK 4  |
| REMARK 3  | REFINEMENT.  | 1DIK 5  |
| REMARK 3  | PROGRAM X-PLOR   | 1DIK 6  |
| REMARK 3  | AUTHORS BRUENGER, A.T.                                     | 1DIK 7  |
| REMARK 3  | R VALUE 0.155  | 1DIK 8  |
| REMARK 3  | FREE R VALUE 0.211   | 1DIK 9  |
| REMARK 3  | RMSD BOND DISTANCES 0.009 ANGSTROMS                        | 1DIK 10 |
| REMARK 3  | RMSD BOND ANGLES 1.5 DEGREES                               | 1DIK 11 |
| REMARK 3  | NUMBER OF REFLECTIONS 17206                                | 1DIK 12 |
| REMARK 3  | RESOLUTION RANGE 20.0 -2.5 ANGSTROMS                       | 1DIK 13 |
| REMARK 3  | DATA CUTOFF 0. SIGMA (F)                                   | 1DIK 14 |
| REMARK 3  | NUMBER OF PROTEIN ATOMS 3369                               | 1DIK 15 |
| REMARK 3  | NUMBER OF SOLVENT ATOMS 115                                | 1DIK 16 |
| REMARK 3  | NUMBER OF SULFATE ATOMS 5                                  | 1DIK 17 |
| REMARK 3  | CONVENTIONAL RESTRAINED POSITIONAL AND TEMPERATURE FACTOR  | 1DIK 18 |
| REMARK 3  | REFINEMENT.  | 1DIK 19 |
| REMARK 3  | THE STEREOCHEMICAL PARAMETERS FROM ENGH & HUBER WERE USED. | 1DIK 20 |
| REMARK 4  |  | 1DIK 21 |
| REMARK 5  | THE ASYMMETRIC UNIT OF THE CRYSTAL CONTAINS OF ONE         | 1DIK 22 |
| REMARK 5  | DEGLYCOSYLATED PROTEIN MONOMER.                            | 1DIK 23 |
| REMARK 6  |  | 1DIK 24 |
| REMARK 6  | THE AMINO ACIDS 249 - 252 ARE COMPLETELY DISORDERED.       | 1DIK 25 |
| REMARK 6  | THE FOLLOWING AMINO ACID SIDE CHAINS ARE DISORDERED:       | 1DIK 26 |
| REMARK 6  | GLU 43, LYS 70, GLU 77, GLN 81, LYS 94, GLN 392, GLN 395,  | 1DIK 27 |
| REMARK 6  | ARG 428  | 1DIK 28 |
| REMARK 6  | THE ELECTRON DENSITY OF THE SULFATE IS NOT WELL DEFINED.   | 1DIK 29 |
| SEQRES 1  | 434 SER CYS ASP THR VAL ASP GLN GLY TYR GLN CYS PHE SER    | 1DIK 30 |
| SEQRES 2  | 434 GLU THR SER HIS LEU TRP GLY GLN TYR ALA PRO PHE PHE    | 1DIK 31 |
| SEQRES 3  | 434 SER LEU ALA ASN GLU SER VAL ILE SER PRO GLU VAL PRO    | 1DIK 32 |
| SEQRES 4  | 434 ALA GLY CYS ARG VAL THR PHE ALA GLN VAL LEU SER ARG    | 1DIK 33 |
| SEQRES 5  | 434 HIS GLY ALA ARG TYR PRO THR ASP SER LYS GLY LYS LYS    | 1DIK 34 |
| SEQRES 6  | 434 TYR SER ALA LEU ILE GLU GLU ILE GLN GLN ASN ALA THR    | 1DIK 35 |
| SEQRES 7  | 434 THR PHE ASP GLY LYS TYR ALA PHE LEU LYS THR TYR ASN    | 1DIK 36 |
| SEQRES 8  | 434 TYR SER LEU GLY ALA ASP ASP LEU THR PRO PHE GLY GLU    | 1DIK 37 |
| SEQRES 9  | 434 GLN GLU LEU VAL ASN SER GLY ILE LYS PHE TYR GLN ARG    | 1DIK 38 |
| SEQRES 10 | 434 TYR GLU SER LEU THR ARG ASN ILE VAL PRO PHE ILE ARG    | 1DIK 39 |
| SEQRES 11 | 434 SER SER GLY SER SER ARG VAL ILE ALA SER GLY LYS LYS    | 1DIK 40 |
| SEQRES 12 | 434 PHE ILE GLU GLY PHE GLN SER THR LYS LEU LYS ASP PRO    | 1DIK 41 |
| SEQRES 13 | 434 ARG ALA GLN PRO GLY GLN SER SER PRO LYS ILE ASP VAL    | 1DIK 42 |
| SEQRES 14 | 434 VAL ILE SER GLU ALA SER SER ASN ASN THR LEU ASP        | 1DIK 43 |
| SEQRES 15 | 434 PRO GLY THR CYS THR VAL PHE GLU ASP SER GLU LEU ALA    | 1DIK 44 |
| SEQRES 16 | 434 ASP THR VAL GLU ALA ASN PHE THR ALA THR PHE VAL PRO    | 1DIK 45 |
| SEQRES 17 | 434 SER ILE ARG GLN ARG LEU GLU ASN ASP LEU SER GLY VAL    | 1DIK 46 |
| SEQRES 18 | 434 THR LEU THR ASP THR GLU VAL THR TYR LEU MET ASP MET    | 1DIK 47 |
| SEQRES 19 | 434 CYS SER PHE ASP THR ILE SER THR THR LYS LEU SER PRO    | 1DIK 48 |
| SEQRES 20 | 434 PHE CYS ASP LEU PHE THR HIS ASP GLU TRP ILE ASN TYR    | 1DIK 49 |
| SEQRES 21 | 434 ASP TYR LEU GLN SER LEU LYS LYS TYR TYR GLY HIS GLY    | 1DIK 50 |
| SEQRES 22 | 434 ALA GLY ASN PRO LEU GLY PRO THR GLN GLY VAL GLY TYR    | 1DIK 51 |
| SEQRES 23 | 434 ALA ASN GLU LEU ILE ALA ARG LEU THR HIS SER PRO VAL    | 1DIK 52 |
| SEQRES 24 | 434 HIS ASP ASP THR SER SER ASN HIS THR LEU ASP SER SER    | 1DIK 53 |
| SEQRES 25 | 434 PRO ALA THR PHE PRO LEU ASN SER THR LEU TYR ALA ASP    | 1DIK 54 |
| SEQRES 26 | 434 PHE SER HIS ASP ASN GLY ILE ILE SER ILE LEU PHE ALA    | 1DIK 55 |
| SEQRES 27 | 434 LEU GLY LEU TYR ASN GLY THR LYS PRO LEU SER THR THR    | 1DIK 56 |
| SEQRES 28 | 434 THR VAL GLU ASN ILE THR GLN THR ASP GLY PHE SER SER    | 1DIK 57 |
| SEQRES 29 | 434 ALA TRP THR VAL PRO PHE ALA SER ARG LEU TYR VAL GLU    | 1DIK 58 |
| SEQRES 30 | 434 MET MET GLN CYS GLN ALA GLU GLN GLU PRO LEU VAL ARG    | 1DIK 59 |

FIG. 8-1



In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|        |     |        |     |        |      |         |         |        |        |         |       |     |     |     |     |      |      |     |
|--------|-----|--------|-----|--------|------|---------|---------|--------|--------|---------|-------|-----|-----|-----|-----|------|------|-----|
| SEORES | 31  | 434    | VAL | LEU    | VAL  | ASN     | ASP     | ARG    | VAL    | VAL     | PRO   | LEU | HIS | GLY | CYS | 1DIK | 81   |     |
| SEORES | 32  | 434    | PRO | VAL    | ASP  | ALA     | LEU     | GLY    | ARG    | CYS     | THR   | ARG | ASP | SER | PHE | 1DIK | 82   |     |
| SEORES | 33  | 434    | VAL | ARG    | GLY  | LEU     | SER     | PHE    | ALA    | ARG     | SER   | GLY | GLY | ASP | TRP | 1DIK | 83   |     |
| SEORES | 34  | 434    | ALA | GLU    | CYS  | PHE     | ALA     |        |        |         |       |     |     |     |     | 1DIK | 84   |     |
| HET    | SO4 | 201    |     |        | 5    |         |         |        |        |         |       |     |     |     |     | 1DIK | 85   |     |
| FORMUL | 2   | SO4    |     |        | 04   | S1      |         |        |        |         |       |     |     |     |     | 1DIK | 86   |     |
| FORMUL | 3   | HOH    |     |        | *115 | (H2 01) |         |        |        |         |       |     |     |     |     | 1DIK | 87   |     |
| SSBOND | 1   | CYS    |     |        | 8    |         | CYS     | 17     |        |         |       |     |     |     |     | 1DIK | 88   |     |
| SSBOND | 2   | CYS    |     |        | 48   |         | CYS     | 391    |        |         |       |     |     |     |     | 1DIK | 89   |     |
| SSBOND | 3   | CYS    |     |        | 192  |         | CYS     | 442    |        |         |       |     |     |     |     | 1DIK | 90   |     |
| SSBOND | 4   | CYS    |     |        | 241  |         | CYS     | 259    |        |         |       |     |     |     |     | 1DIK | 91   |     |
| SSBOND | 5   | CYS    |     |        | 413  |         | CYS     | 421    |        |         |       |     |     |     |     | 1DIK | 92   |     |
| CRYST1 |     | 92.250 |     | 92.250 |      | 100.890 | 90.00   | 90.00  | 120.00 | P 3 2 1 |       |     |     |     |     | 6    | 1DIK | 93  |
| ATOM   | 1   | N      | SER |        | 7    |         | -18.097 | 39.685 | 9.811  | 1.00    | 62.21 |     |     |     |     |      | 1DIK | 94  |
| ATOM   | 2   | CA     | SER |        | 7    |         | -17.205 | 40.761 | 9.300  | 1.00    | 63.47 |     |     |     |     |      | 1DIK | 95  |
| ATOM   | 3   | C      | SER |        | 7    |         | -16.157 | 41.230 | 10.307 | 1.00    | 63.25 |     |     |     |     |      | 1DIK | 96  |
| ATOM   | 4   | O      | SER |        | 7    |         | -15.210 | 41.924 | 9.918  | 1.00    | 63.40 |     |     |     |     |      | 1DIK | 97  |
| ATOM   | 5   | CB     | SER |        | 7    |         | -18.027 | 41.947 | 8.800  | 1.00    | 64.21 |     |     |     |     |      | 1DIK | 98  |
| ATOM   | 7   | OG     | SER |        | 7    |         | -18.983 | 41.499 | 7.850  | 1.00    | 69.41 |     |     |     |     |      | 1DIK | 99  |
| ATOM   | 8   | N      | CYS |        | 8    |         | -16.314 | 40.885 | 11.590 | 1.00    | 60.09 |     |     |     |     |      | 1DIK | 100 |
| ATOM   | 9   | CA     | CYS |        | 8    |         | -15.278 | 41.262 | 12.561 | 1.00    | 57.19 |     |     |     |     |      | 1DIK | 101 |
| ATOM   | 10  | C      | CYS |        | 8    |         | -14.528 | 40.052 | 13.134 | 1.00    | 54.36 |     |     |     |     |      | 1DIK | 102 |
| ATOM   | 11  | O      | CYS |        | 8    |         | -13.593 | 40.225 | 13.913 | 1.00    | 54.16 |     |     |     |     |      | 1DIK | 103 |
| ATOM   | 12  | CB     | CYS |        | 8    |         | -15.738 | 42.278 | 13.657 | 1.00    | 55.87 |     |     |     |     |      | 1DIK | 104 |
| ATOM   | 13  | SG     | CYS |        | 8    |         | -17.414 | 42.211 | 14.391 | 1.00    | 47.31 |     |     |     |     |      | 1DIK | 105 |
| ATOM   | 14  | N      | ASP |        | 9    |         | -14.945 | 38.838 | 12.748 | 1.00    | 49.46 |     |     |     |     |      | 1DIK | 106 |
| ATOM   | 15  | CA     | ASP |        | 9    |         | -14.217 | 37.609 | 13.109 | 1.00    | 44.53 |     |     |     |     |      | 1DIK | 107 |
| ATOM   | 16  | C      | ASP |        | 9    |         | -13.647 | 37.121 | 11.763 | 1.00    | 43.95 |     |     |     |     |      | 1DIK | 108 |
| ATOM   | 17  | O      | ASP |        | 9    |         | -14.380 | 36.543 | 10.956 | 1.00    | 45.30 |     |     |     |     |      | 1DIK | 109 |
| ATOM   | 18  | CB     | ASP |        | 9    |         | -15.112 | 36.512 | 13.687 | 1.00    | 36.86 |     |     |     |     |      | 1DIK | 110 |
| ATOM   | 19  | CG     | ASP |        | 9    |         | -14.324 | 35.205 | 13.981 | 1.00    | 43.08 |     |     |     |     |      | 1DIK | 111 |
| ATOM   | 20  | OD1    | ASP |        | 9    |         | -13.169 | 35.246 | 14.466 | 1.00    | 36.37 |     |     |     |     |      | 1DIK | 112 |
| ATOM   | 21  | OD2    | ASP |        | 9    |         | -14.860 | 34.107 | 13.725 | 1.00    | 53.20 |     |     |     |     |      | 1DIK | 113 |
| ATOM   | 22  | N      | THR |        | 10   |         | -12.360 | 37.357 | 11.515 | 1.00    | 39.20 |     |     |     |     |      | 1DIK | 114 |
| ATOM   | 23  | CA     | THR |        | 10   |         | -11.744 | 36.961 | 10.248 | 1.00    | 34.97 |     |     |     |     |      | 1DIK | 115 |
| ATOM   | 24  | C      | THR |        | 10   |         | -10.770 | 35.792 | 10.388 | 1.00    | 35.15 |     |     |     |     |      | 1DIK | 116 |
| ATOM   | 25  | O      | THR |        | 10   |         | -10.407 | 35.410 | 11.502 | 1.00    | 32.93 |     |     |     |     |      | 1DIK | 117 |
| ATOM   | 26  | CB     | THR |        | 10   |         | -10.988 | 38.148 | 9.605  | 1.00    | 32.39 |     |     |     |     |      | 1DIK | 118 |
| ATOM   | 27  | OG1    | THR |        | 10   |         | -9.967  | 38.612 | 10.500 | 1.00    | 36.02 |     |     |     |     |      | 1DIK | 119 |
| ATOM   | 28  | CG2    | THR |        | 10   |         | -11.937 | 39.286 | 9.319  | 1.00    | 24.30 |     |     |     |     |      | 1DIK | 120 |
| ATOM   | 29  | N      | VAL |        | 11   |         | -10.352 | 35.228 | 9.256  | 1.00    | 35.93 |     |     |     |     |      | 1DIK | 121 |
| ATOM   | 30  | CA     | VAL |        | 11   |         | -9.398  | 34.123 | 9.261  | 1.00    | 35.37 |     |     |     |     |      | 1DIK | 122 |
| ATOM   | 31  | C      | VAL |        | 11   |         | -8.050  | 34.591 | 9.798  | 1.00    | 36.90 |     |     |     |     |      | 1DIK | 123 |
| ATOM   | 32  | O      | VAL |        | 11   |         | -7.442  | 33.912 | 10.623 | 1.00    | 38.05 |     |     |     |     |      | 1DIK | 124 |
| ATOM   | 33  | CB     | VAL |        | 11   |         | -9.196  | 33.528 | 7.840  | 1.00    | 36.34 |     |     |     |     |      | 1DIK | 125 |
| ATOM   | 34  | CG1    | VAL |        | 11   |         | -7.982  | 32.584 | 7.806  | 1.00    | 29.66 |     |     |     |     |      | 1DIK | 126 |
| ATOM   | 35  | CG2    | VAL |        | 11   |         | -10.440 | 32.772 | 7.429  | 1.00    | 36.52 |     |     |     |     |      | 1DIK | 127 |
| ATOM   | 36  | N      | ASP |        | 12   |         | -7.585  | 35.749 | 9.334  | 1.00    | 36.93 |     |     |     |     |      | 1DIK | 128 |
| ATOM   | 37  | CA     | ASP |        | 12   |         | -6.298  | 36.277 | 9.774  | 1.00    | 35.36 |     |     |     |     |      | 1DIK | 129 |
| ATOM   | 38  | C      | ASP |        | 12   |         | -6.298  | 37.009 | 11.094 | 1.00    | 32.61 |     |     |     |     |      | 1DIK | 130 |
| ATOM   | 39  | O      | ASP |        | 12   |         | -5.449  | 36.757 | 11.930 | 1.00    | 31.31 |     |     |     |     |      | 1DIK | 131 |
| ATOM   | 40  | CB     | ASP |        | 12   |         | -5.698  | 37.195 | 8.712  | 1.00    | 44.11 |     |     |     |     |      | 1DIK | 132 |
| ATOM   | 41  | CG     | ASP |        | 12   |         | -4.974  | 36.428 | 7.629  | 1.00    | 54.17 |     |     |     |     |      | 1DIK | 133 |
| ATOM   | 42  | OD1    | ASP |        | 12   |         | -3.831  | 35.998 | 7.891  | 1.00    | 59.05 |     |     |     |     |      | 1DIK | 134 |
| ATOM   | 43  | OD2    | ASP |        | 12   |         | -5.540  | 36.252 | 6.523  | 1.00    | 57.68 |     |     |     |     |      | 1DIK | 135 |
| ATOM   | 44  | N      | GLN |        | 13   |         | -7.241  | 37.918 | 11.294 | 1.00    | 31.17 |     |     |     |     |      | 1DIK | 136 |
| ATOM   | 45  | CA     | GLN |        | 13   |         | -7.251  | 38.684 | 12.530 | 1.00    | 31.70 |     |     |     |     |      | 1DIK | 137 |
| ATOM   | 46  | C      | GLN |        | 13   |         | -7.944  | 38.049 | 13.741 | 1.00    | 30.12 |     |     |     |     |      | 1DIK | 138 |
| ATOM   | 47  | O      | GLN |        | 13   |         | -7.706  | 38.450 | 14.879 | 1.00    | 26.40 |     |     |     |     |      | 1DIK | 139 |
| ATOM   | 48  | CB     | GLN |        | 13   |         | -7.804  | 40.090 | 12.265 | 1.00    | 38.39 |     |     |     |     |      | 1DIK | 140 |
| ATOM   | 49  | CG     | GLN |        | 13   |         | -6.865  | 40.982 | 11.450 | 1.00    | 44.04 |     |     |     |     |      | 1DIK | 141 |
| ATOM   | 50  | CD     | GLN |        | 13   |         | -5.467  | 41.085 | 12.071 | 1.00    | 53.25 |     |     |     |     |      | 1DIK | 142 |
| ATOM   | 51  | OE1    | GLN |        | 13   |         | -5.251  | 41.806 | 13.055 | 1.00    | 56.16 |     |     |     |     |      | 1DIK | 143 |
| ATOM   | 52  | NE2    | GLN |        | 13   |         | -4.510  | 40.357 | 11.497 | 1.00    | 59.15 |     |     |     |     |      | 1DIK | 144 |
| ATOM   | 53  | N      | GLY |        | 14   |         | -8.792  | 37.057 | 13.520 | 1.00    | 26.13 |     |     |     |     |      | 1DIK | 145 |
| ATOM   | 54  | CA     | GLY |        | 14   |         | -9.476  | 36.460 | 14.648 | 1.00    | 23.53 |     |     |     |     |      | 1DIK | 146 |

FIG. 8-2

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 55  | C   | GLY | 14 | -10.684 | 37.301 | 15.001 | 1.00 | 23.28 | 1DIK 147 |
| ATOM | 56  | O   | GLY | 14 | -11.198 | 38.031 | 14.162 | 1.00 | 21.73 | 1DIK 148 |
| ATOM | 57  | N   | TYR | 15 | -11.137 | 37.211 | 16.241 | 1.00 | 26.17 | 1DIK 149 |
| ATOM | 58  | CA  | TYR | 15 | -12.312 | 37.944 | 16.682 | 1.00 | 27.82 | 1DIK 150 |
| ATOM | 59  | C   | TYR | 15 | -12.033 | 39.383 | 17.139 | 1.00 | 29.70 | 1DIK 151 |
| ATOM | 60  | O   | TYR | 15 | -11.437 | 39.617 | 18.200 | 1.00 | 30.97 | 1DIK 152 |
| ATOM | 61  | CB  | TYR | 15 | -12.986 | 37.154 | 17.786 | 1.00 | 27.03 | 1DIK 153 |
| ATOM | 62  | CG  | TYR | 15 | -14.380 | 37.607 | 18.120 | 1.00 | 31.13 | 1DIK 154 |
| ATOM | 63  | CD1 | TYR | 15 | -15.471 | 37.146 | 17.386 | 1.00 | 30.29 | 1DIK 155 |
| ATOM | 64  | CD2 | TYR | 15 | -14.620 | 38.456 | 19.203 | 1.00 | 29.69 | 1DIK 156 |
| ATOM | 65  | CE1 | TYR | 15 | -16.767 | 37.512 | 17.721 | 1.00 | 33.21 | 1DIK 157 |
| ATOM | 66  | CE2 | TYR | 15 | -15.912 | 38.829 | 19.549 | 1.00 | 30.40 | 1DIK 158 |
| ATOM | 67  | CZ  | TYR | 15 | -16.982 | 38.355 | 18.808 | 1.00 | 34.78 | 1DIK 159 |
| ATOM | 68  | OH  | TYR | 15 | -18.266 | 38.709 | 19.151 | 1.00 | 36.84 | 1DIK 160 |
| ATOM | 69  | N   | GLN | 16 | -12.482 | 40.336 | 16.327 | 1.00 | 28.71 | 1DIK 161 |
| ATOM | 70  | CA  | GLN | 16 | -12.293 | 41.760 | 16.583 | 1.00 | 31.69 | 1DIK 162 |
| ATOM | 71  | C   | GLN | 16 | -13.566 | 42.534 | 16.957 | 1.00 | 30.38 | 1DIK 163 |
| ATOM | 72  | O   | GLN | 16 | -13.543 | 43.754 | 17.038 | 1.00 | 35.26 | 1DIK 164 |
| ATOM | 73  | CB  | GLN | 16 | -11.616 | 42.419 | 15.367 | 1.00 | 32.17 | 1DIK 165 |
| ATOM | 74  | CG  | GLN | 16 | -10.250 | 41.819 | 14.974 | 1.00 | 34.26 | 1DIK 166 |
| ATOM | 75  | CD  | GLN | 16 | -9.212  | 41.894 | 16.098 | 1.00 | 40.25 | 1DIK 167 |
| ATOM | 76  | OE1 | GLN | 16 | -9.300  | 42.740 | 16.991 | 1.00 | 44.10 | 1DIK 168 |
| ATOM | 77  | NE2 | GLN | 16 | -8.227  | 41.003 | 16.060 | 1.00 | 37.91 | 1DIK 169 |
| ATOM | 78  | N   | CYS | 17 | -14.673 | 41.836 | 17.182 | 1.00 | 32.53 | 1DIK 170 |
| ATOM | 79  | CA  | CYS | 17 | -15.934 | 42.483 | 17.563 | 1.00 | 34.82 | 1DIK 171 |
| ATOM | 80  | C   | CYS | 17 | -15.880 | 42.811 | 19.062 | 1.00 | 32.69 | 1DIK 172 |
| ATOM | 81  | O   | CYS | 17 | -15.355 | 42.015 | 19.843 | 1.00 | 34.59 | 1DIK 173 |
| ATOM | 82  | CB  | CYS | 17 | -17.131 | 41.544 | 17.323 | 1.00 | 40.76 | 1DIK 174 |
| ATOM | 83  | SG  | CYS | 17 | -17.305 | 40.688 | 15.705 | 1.00 | 49.21 | 1DIK 175 |
| ATOM | 84  | N   | PHE | 18 | -16.413 | 43.965 | 19.464 | 1.00 | 28.18 | 1DIK 176 |
| ATOM | 85  | CA  | PHE | 18 | -16.446 | 44.383 | 20.882 | 1.00 | 26.43 | 1DIK 177 |
| ATOM | 86  | C   | PHE | 18 | -15.108 | 44.212 | 21.611 | 1.00 | 26.33 | 1DIK 178 |
| ATOM | 87  | O   | PHE | 18 | -15.098 | 43.898 | 22.798 | 1.00 | 30.47 | 1DIK 179 |
| ATOM | 88  | CB  | PHE | 18 | -17.499 | 43.579 | 21.665 | 1.00 | 20.51 | 1DIK 180 |
| ATOM | 89  | CG  | PHE | 18 | -18.754 | 43.278 | 20.892 | 1.00 | 19.05 | 1DIK 181 |
| ATOM | 90  | CD1 | PHE | 18 | -19.677 | 44.275 | 20.610 | 1.00 | 21.82 | 1DIK 182 |
| ATOM | 91  | CD2 | PHE | 18 | -19.014 | 41.988 | 20.447 | 1.00 | 16.40 | 1DIK 183 |
| ATOM | 92  | CE1 | PHE | 18 | -20.850 | 43.991 | 19.892 | 1.00 | 21.59 | 1DIK 184 |
| ATOM | 93  | CE2 | PHE | 18 | -20.180 | 41.691 | 19.729 | 1.00 | 19.40 | 1DIK 185 |
| ATOM | 94  | CZ  | PHE | 18 | -21.100 | 42.695 | 19.451 | 1.00 | 21.61 | 1DIK 186 |
| ATOM | 95  | N   | SER | 19 | -13.997 | 44.422 | 20.912 | 1.00 | 29.30 | 1DIK 187 |
| ATOM | 96  | CA  | SER | 19 | -12.648 | 44.228 | 21.461 | 1.00 | 30.72 | 1DIK 188 |
| ATOM | 97  | C   | SER | 19 | -12.361 | 44.754 | 22.857 | 1.00 | 31.50 | 1DIK 189 |
| ATOM | 98  | O   | SER | 19 | -11.619 | 44.128 | 23.617 | 1.00 | 32.76 | 1DIK 190 |
| ATOM | 99  | CB  | SER | 19 | -11.603 | 44.799 | 20.500 | 1.00 | 28.75 | 1DIK 191 |
| ATOM | 100 | OG  | SER | 19 | -11.757 | 46.201 | 20.381 | 1.00 | 33.48 | 1DIK 192 |
| ATOM | 101 | N   | GLU | 20 | -12.939 | 45.899 | 23.192 | 1.00 | 31.46 | 1DIK 193 |
| ATOM | 102 | CA  | GLU | 20 | -12.715 | 46.498 | 24.497 | 1.00 | 34.60 | 1DIK 194 |
| ATOM | 103 | C   | GLU | 20 | -13.323 | 45.653 | 25.626 | 1.00 | 33.63 | 1DIK 195 |
| ATOM | 104 | O   | GLU | 20 | -12.963 | 45.832 | 26.786 | 1.00 | 35.88 | 1DIK 196 |
| ATOM | 105 | CB  | GLU | 20 | -13.214 | 47.961 | 24.522 | 1.00 | 36.86 | 1DIK 197 |
| ATOM | 106 | CG  | GLU | 20 | -14.736 | 48.175 | 24.598 | 1.00 | 47.02 | 1DIK 198 |
| ATOM | 107 | CD  | GLU | 20 | -15.534 | 47.635 | 23.389 | 1.00 | 56.13 | 1DIK 199 |
| ATOM | 108 | OE1 | GLU | 20 | -15.103 | 47.815 | 22.218 | 1.00 | 56.48 | 1DIK 200 |
| ATOM | 109 | OE2 | GLU | 20 | -16.615 | 47.025 | 23.618 | 1.00 | 58.06 | 1DIK 201 |
| ATOM | 110 | N   | THR | 21 | -14.234 | 44.736 | 25.288 | 1.00 | 30.34 | 1DIK 202 |
| ATOM | 111 | CA  | THR | 21 | -14.861 | 43.832 | 26.267 | 1.00 | 27.14 | 1DIK 203 |
| ATOM | 112 | C   | THR | 21 | -14.525 | 42.355 | 25.983 | 1.00 | 26.26 | 1DIK 204 |
| ATOM | 113 | O   | THR | 21 | -14.048 | 41.641 | 26.868 | 1.00 | 24.39 | 1DIK 205 |
| ATOM | 114 | CB  | THR | 21 | -16.405 | 43.965 | 26.272 | 1.00 | 26.34 | 1DIK 206 |
| ATOM | 115 | OG1 | THR | 21 | -16.758 | 45.337 | 26.448 | 1.00 | 32.63 | 1DIK 207 |
| ATOM | 116 | CG2 | THR | 21 | -17.026 | 43.137 | 27.395 | 1.00 | 15.06 | 1DIK 208 |
| ATOM | 117 | N   | SER | 22 | -14.763 | 41.903 | 24.750 | 1.00 | 24.89 | 1DIK 209 |
| ATOM | 118 | CA  | SER | 22 | -14.533 | 40.506 | 24.377 | 1.00 | 21.13 | 1DIK 210 |
| ATOM | 119 | C   | SER | 22 | -13.105 | 40.015 | 24.621 | 1.00 | 20.85 | 1DIK 211 |
| ATOM | 120 | O   | SER | 22 | -12.896 | 38.837 | 24.919 | 1.00 | 19.87 | 1DIK 212 |

FIG. 8-3

In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 121 | CB  | SER | 22 | -14.924 | 40.282 | 22.918 | 1.00 | 16.59 | 1DIK 213 |
| ATOM | 122 | OG  | SER | 22 | -14.015 | 40.939 | 22.044 | 1.00 | 23.72 | 1DIK 214 |
| ATOM | 123 | N   | HIS | 23 | -12.126 | 40.911 | 24.497 | 1.00 | 20.46 | 1DIK 215 |
| ATOM | 124 | CA  | HIS | 23 | -10.726 | 40.555 | 24.708 | 1.00 | 20.05 | 1DIK 216 |
| ATOM | 125 | C   | HIS | 23 | -10.329 | 40.455 | 26.183 | 1.00 | 24.47 | 1DIK 217 |
| ATOM | 126 | O   | HIS | 23 | -9.196  | 40.084 | 26.496 | 1.00 | 25.61 | 1DIK 218 |
| ATOM | 127 | CB  | HIS | 23 | -9.800  | 41.536 | 23.982 | 1.00 | 17.77 | 1DIK 219 |
| ATOM | 128 | CG  | HIS | 23 | -9.861  | 41.426 | 22.484 | 1.00 | 24.57 | 1DIK 220 |
| ATOM | 129 | ND1 | HIS | 23 | -8.936  | 42.020 | 21.651 | 1.00 | 20.40 | 1DIK 221 |
| ATOM | 130 | CD2 | HIS | 23 | -10.746 | 40.795 | 21.670 | 1.00 | 23.97 | 1DIK 222 |
| ATOM | 131 | CE1 | HIS | 23 | -9.247  | 41.764 | 20.392 | 1.00 | 20.67 | 1DIK 223 |
| ATOM | 132 | NE2 | HIS | 23 | -10.340 | 41.022 | 20.376 | 1.00 | 23.06 | 1DIK 224 |
| ATOM | 133 | N   | LEU | 24 | -11.263 | 40.776 | 27.081 | 1.00 | 25.15 | 1DIK 225 |
| ATOM | 134 | CA  | LEU | 24 | -11.025 | 40.716 | 28.524 | 1.00 | 24.99 | 1DIK 226 |
| ATOM | 135 | C   | LEU | 24 | -11.739 | 39.538 | 29.210 | 1.00 | 27.65 | 1DIK 227 |
| ATOM | 136 | O   | LEU | 24 | -11.984 | 39.575 | 30.421 | 1.00 | 25.05 | 1DIK 228 |
| ATOM | 137 | CB  | LEU | 24 | -11.455 | 42.034 | 29.176 | 1.00 | 22.74 | 1DIK 229 |
| ATOM | 138 | CG  | LEU | 24 | -10.626 | 43.258 | 28.774 | 1.00 | 22.62 | 1DIK 230 |
| ATOM | 139 | CD1 | LEU | 24 | -11.264 | 44.509 | 29.324 | 1.00 | 23.25 | 1DIK 231 |
| ATOM | 140 | CD2 | LEU | 24 | -9.211  | 43.126 | 29.281 | 1.00 | 15.42 | 1DIK 232 |
| ATOM | 141 | N   | TRP | 25 | -12.062 | 38.496 | 28.437 | 1.00 | 26.64 | 1DIK 233 |
| ATOM | 142 | CA  | TRP | 25 | -12.744 | 37.317 | 28.961 | 1.00 | 21.87 | 1DIK 234 |
| ATOM | 143 | C   | TRP | 25 | -11.811 | 36.148 | 29.357 | 1.00 | 22.59 | 1DIK 235 |
| ATOM | 144 | O   | TRP | 25 | -12.283 | 35.040 | 29.625 | 1.00 | 22.32 | 1DIK 236 |
| ATOM | 145 | CB  | TRP | 25 | -13.804 | 36.845 | 27.951 | 1.00 | 22.87 | 1DIK 237 |
| ATOM | 146 | CG  | TRP | 25 | -14.977 | 37.813 | 27.754 | 1.00 | 25.99 | 1DIK 238 |
| ATOM | 147 | CD1 | TRP | 25 | -15.376 | 38.805 | 28.615 | 1.00 | 22.03 | 1DIK 239 |
| ATOM | 148 | CD2 | TRP | 25 | -15.880 | 37.877 | 26.626 | 1.00 | 23.51 | 1DIK 240 |
| ATOM | 149 | NE1 | TRP | 25 | -16.459 | 39.475 | 28.094 | 1.00 | 22.08 | 1DIK 241 |
| ATOM | 150 | CE2 | TRP | 25 | -16.792 | 38.931 | 26.877 | 1.00 | 24.34 | 1DIK 242 |
| ATOM | 151 | CE3 | TRP | 25 | -16.004 | 37.150 | 25.425 | 1.00 | 25.98 | 1DIK 243 |
| ATOM | 152 | CZ2 | TRP | 25 | -17.821 | 39.280 | 25.973 | 1.00 | 20.60 | 1DIK 244 |
| ATOM | 153 | CZ3 | TRP | 25 | -17.034 | 37.500 | 24.517 | 1.00 | 21.02 | 1DIK 245 |
| ATOM | 154 | CH2 | TRP | 25 | -17.923 | 38.555 | 24.804 | 1.00 | 20.24 | 1DIK 246 |
| ATOM | 155 | N   | GLY | 26 | -10.499 | 36.384 | 29.403 | 1.00 | 20.85 | 1DIK 247 |
| ATOM | 156 | CA  | GLY | 26 | -9.566  | 35.322 | 29.757 | 1.00 | 21.54 | 1DIK 248 |
| ATOM | 157 | C   | GLY | 26 | -9.676  | 34.138 | 28.806 | 1.00 | 21.52 | 1DIK 249 |
| ATOM | 158 | O   | GLY | 26 | -9.642  | 34.319 | 27.590 | 1.00 | 19.25 | 1DIK 250 |
| ATOM | 159 | N   | GLN | 27 | -9.819  | 32.927 | 29.346 | 1.00 | 23.90 | 1DIK 251 |
| ATOM | 160 | CA  | GLN | 27 | -9.946  | 31.740 | 28.503 | 1.00 | 24.89 | 1DIK 252 |
| ATOM | 161 | C   | GLN | 27 | -11.340 | 31.566 | 27.902 | 1.00 | 24.51 | 1DIK 253 |
| ATOM | 162 | O   | GLN | 27 | -11.600 | 30.573 | 27.226 | 1.00 | 25.98 | 1DIK 254 |
| ATOM | 163 | CB  | GLN | 27 | -9.535  | 30.455 | 29.245 | 1.00 | 23.84 | 1DIK 255 |
| ATOM | 164 | CG  | GLN | 27 | -10.472 | 29.995 | 30.323 | 1.00 | 21.01 | 1DIK 256 |
| ATOM | 165 | CD  | GLN | 27 | -10.344 | 30.823 | 31.573 | 1.00 | 27.35 | 1DIK 257 |
| ATOM | 166 | OE1 | GLN | 27 | -9.452  | 31.671 | 31.694 | 1.00 | 31.10 | 1DIK 258 |
| ATOM | 167 | NE2 | GLN | 27 | -11.231 | 30.588 | 32.517 | 1.00 | 32.00 | 1DIK 259 |
| ATOM | 168 | N   | TYR | 28 | -12.241 | 32.516 | 28.156 | 1.00 | 25.51 | 1DIK 260 |
| ATOM | 169 | CA  | TYR | 28 | -13.592 | 32.472 | 27.578 | 1.00 | 23.43 | 1DIK 261 |
| ATOM | 170 | C   | TYR | 28 | -13.647 | 33.499 | 26.433 | 1.00 | 24.19 | 1DIK 262 |
| ATOM | 171 | O   | TYR | 28 | -14.716 | 33.779 | 25.867 | 1.00 | 24.91 | 1DIK 263 |
| ATOM | 172 | CB  | TYR | 28 | -14.673 | 32.787 | 28.624 | 1.00 | 20.52 | 1DIK 264 |
| ATOM | 173 | CG  | TYR | 28 | -14.797 | 31.767 | 29.727 | 1.00 | 21.45 | 1DIK 265 |
| ATOM | 174 | CD1 | TYR | 28 | -14.609 | 30.402 | 29.480 | 1.00 | 25.41 | 1DIK 266 |
| ATOM | 175 | CD2 | TYR | 28 | -15.091 | 32.164 | 31.027 | 1.00 | 26.26 | 1DIK 267 |
| ATOM | 176 | CE1 | TYR | 28 | -14.711 | 29.462 | 30.506 | 1.00 | 24.86 | 1DIK 268 |
| ATOM | 177 | CE2 | TYR | 28 | -15.194 | 31.238 | 32.056 | 1.00 | 28.46 | 1DIK 269 |
| ATOM | 178 | CZ  | TYR | 28 | -15.005 | 29.895 | 31.793 | 1.00 | 29.76 | 1DIK 270 |
| ATOM | 179 | OH  | TYR | 28 | -15.113 | 28.997 | 32.827 | 1.00 | 35.18 | 1DIK 271 |
| ATOM | 180 | N   | ALA | 29 | -12.480 | 34.061 | 26.111 | 1.00 | 21.55 | 1DIK 272 |
| ATOM | 181 | CA  | ALA | 29 | -12.340 | 35.025 | 25.029 | 1.00 | 21.69 | 1DIK 273 |
| ATOM | 182 | C   | ALA | 29 | -12.102 | 34.251 | 23.725 | 1.00 | 22.47 | 1DIK 274 |
| ATOM | 183 | O   | ALA | 29 | -11.401 | 33.233 | 23.720 | 1.00 | 22.07 | 1DIK 275 |
| ATOM | 184 | CB  | ALA | 29 | -11.139 | 35.944 | 25.305 | 1.00 | 12.96 | 1DIK 276 |
| ATOM | 185 | N   | PRO | 30 | -12.709 | 34.697 | 22.612 | 1.00 | 24.01 | 1DIK 277 |
| ATOM | 186 | CA  | PRO | 30 | -12.509 | 34.027 | 21.319 | 1.00 | 20.94 | 1DIK 278 |

FIG. 8-4

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 187 | C   | PRO | 30 | -11.099 | 34.409 | 20.841 | 1.00 | 19.17 | 1DIK 279 |
| ATOM | 188 | O   | PRO | 30 | -10.608 | 35.498 | 21.155 | 1.00 | 18.52 | 1DIK 280 |
| ATOM | 189 | CB  | PRO | 30 | -13.568 | 34.671 | 20.414 | 1.00 | 20.61 | 1DIK 281 |
| ATOM | 190 | CG  | PRO | 30 | -14.540 | 35.324 | 21.362 | 1.00 | 24.76 | 1DIK 282 |
| ATOM | 191 | CD  | PRO | 30 | -13.651 | 35.819 | 22.480 | 1.00 | 25.47 | 1DIK 283 |
| ATOM | 192 | N   | PHE | 31 | -10.438 | 33.533 | 20.093 | 1.00 | 20.80 | 1DIK 284 |
| ATOM | 193 | CA  | PHE | 31 | -9.102  | 33.861 | 19.596 | 1.00 | 19.54 | 1DIK 285 |
| ATOM | 194 | C   | PHE | 31 | -9.077  | 35.195 | 18.814 | 1.00 | 20.93 | 1DIK 286 |
| ATOM | 195 | O   | PHE | 31 | -9.957  | 35.482 | 17.984 | 1.00 | 20.23 | 1DIK 287 |
| ATOM | 196 | CB  | PHE | 31 | -8.552  | 32.723 | 18.692 | 1.00 | 17.50 | 1DIK 288 |
| ATOM | 197 | CG  | PHE | 31 | -7.448  | 33.165 | 17.750 | 1.00 | 19.27 | 1DIK 289 |
| ATOM | 198 | CD1 | PHE | 31 | -6.119  | 33.222 | 18.181 | 1.00 | 21.10 | 1DIK 290 |
| ATOM | 199 | CD2 | PHE | 31 | -7.747  | 33.579 | 16.435 | 1.00 | 18.79 | 1DIK 291 |
| ATOM | 200 | CE1 | PHE | 31 | -5.105  | 33.692 | 17.318 | 1.00 | 21.44 | 1DIK 292 |
| ATOM | 201 | CE2 | PHE | 31 | -6.741  | 34.050 | 15.564 | 1.00 | 14.12 | 1DIK 293 |
| ATOM | 202 | CZ  | PHE | 31 | -5.426  | 34.108 | 16.005 | 1.00 | 17.15 | 1DIK 294 |
| ATOM | 203 | N   | PHE | 32 | -8.067  | 36.005 | 19.097 | 1.00 | 18.45 | 1DIK 295 |
| ATOM | 204 | CA  | PHE | 32 | -7.844  | 37.244 | 18.368 | 1.00 | 20.59 | 1DIK 296 |
| ATOM | 205 | C   | PHE | 32 | -6.324  | 37.260 | 18.121 | 1.00 | 20.82 | 1DIK 297 |
| ATOM | 206 | O   | PHE | 32 | -5.536  | 36.921 | 19.002 | 1.00 | 23.47 | 1DIK 298 |
| ATOM | 207 | CB  | PHE | 32 | -8.350  | 38.480 | 19.131 | 1.00 | 19.12 | 1DIK 299 |
| ATOM | 208 | CG  | PHE | 32 | -7.872  | 38.573 | 20.560 | 1.00 | 23.83 | 1DIK 300 |
| ATOM | 209 | CD1 | PHE | 32 | -8.508  | 37.845 | 21.577 | 1.00 | 20.95 | 1DIK 301 |
| ATOM | 210 | CD2 | PHE | 32 | -6.806  | 39.406 | 20.896 | 1.00 | 19.92 | 1DIK 302 |
| ATOM | 211 | CE1 | PHE | 32 | -8.095  | 37.946 | 22.896 | 1.00 | 20.93 | 1DIK 303 |
| ATOM | 212 | CE2 | PHE | 32 | -6.382  | 39.517 | 22.219 | 1.00 | 22.76 | 1DIK 304 |
| ATOM | 213 | CZ  | PHE | 32 | -7.032  | 38.783 | 23.226 | 1.00 | 23.83 | 1DIK 305 |
| ATOM | 214 | N   | SER | 33 | -5.914  | 37.623 | 16.915 | 1.00 | 20.87 | 1DIK 306 |
| ATOM | 215 | CA  | SER | 33 | -4.504  | 37.635 | 16.571 | 1.00 | 22.19 | 1DIK 307 |
| ATOM | 216 | C   | SER | 33 | -3.672  | 38.690 | 17.284 | 1.00 | 23.15 | 1DIK 308 |
| ATOM | 217 | O   | SER | 33 | -4.041  | 39.870 | 17.320 | 1.00 | 23.04 | 1DIK 309 |
| ATOM | 218 | CB  | SER | 33 | -4.329  | 37.796 | 15.060 | 1.00 | 22.81 | 1DIK 310 |
| ATOM | 219 | OG  | SER | 33 | -2.947  | 37.792 | 14.729 | 1.00 | 25.39 | 1DIK 311 |
| ATOM | 220 | N   | LEU | 34 | -2.544  | 38.263 | 17.846 | 1.00 | 23.77 | 1DIK 312 |
| ATOM | 221 | CA  | LEU | 34 | -1.638  | 39.188 | 18.523 | 1.00 | 25.51 | 1DIK 313 |
| ATOM | 222 | C   | LEU | 34 | -0.492  | 39.605 | 17.606 | 1.00 | 26.78 | 1DIK 314 |
| ATOM | 223 | O   | LEU | 34 | 0.501   | 40.148 | 18.084 | 1.00 | 26.99 | 1DIK 315 |
| ATOM | 224 | CB  | LEU | 34 | -1.063  | 38.572 | 19.796 | 1.00 | 23.17 | 1DIK 316 |
| ATOM | 225 | CG  | LEU | 34 | -2.087  | 38.252 | 20.887 | 1.00 | 25.71 | 1DIK 317 |
| ATOM | 226 | CD1 | LEU | 34 | -1.395  | 37.465 | 21.984 | 1.00 | 23.09 | 1DIK 318 |
| ATOM | 227 | CD2 | LEU | 34 | -2.712  | 39.528 | 21.427 | 1.00 | 19.78 | 1DIK 319 |
| ATOM | 228 | N   | ALA | 35 | -0.639  | 39.365 | 16.301 | 1.00 | 27.00 | 1DIK 320 |
| ATOM | 229 | CA  | ALA | 35 | 0.390   | 39.711 | 15.319 | 1.00 | 31.06 | 1DIK 321 |
| ATOM | 230 | C   | ALA | 35 | 0.835   | 41.166 | 15.428 | 1.00 | 35.74 | 1DIK 322 |
| ATOM | 231 | O   | ALA | 35 | 2.025   | 41.455 | 15.344 | 1.00 | 39.04 | 1DIK 323 |
| ATOM | 232 | CB  | ALA | 35 | -0.103  | 39.434 | 13.915 | 1.00 | 24.83 | 1DIK 324 |
| ATOM | 233 | N   | ASN | 36 | -0.118  | 42.075 | 15.623 | 1.00 | 39.86 | 1DIK 325 |
| ATOM | 234 | CA  | ASN | 36 | 0.181   | 43.506 | 15.737 | 1.00 | 41.12 | 1DIK 326 |
| ATOM | 235 | C   | ASN | 36 | 0.815   | 43.897 | 17.057 | 1.00 | 40.64 | 1DIK 327 |
| ATOM | 236 | O   | ASN | 36 | 1.319   | 45.010 | 17.188 | 1.00 | 42.67 | 1DIK 328 |
| ATOM | 237 | CB  | ASN | 36 | -1.084  | 44.349 | 15.538 | 1.00 | 43.24 | 1DIK 329 |
| ATOM | 238 | CG  | ASN | 36 | -1.671  | 44.193 | 14.156 | 1.00 | 49.12 | 1DIK 330 |
| ATOM | 239 | OD1 | ASN | 36 | -0.945  | 44.021 | 13.172 | 1.00 | 50.49 | 1DIK 331 |
| ATOM | 240 | ND2 | ASN | 36 | -2.995  | 44.246 | 14.066 | 1.00 | 56.59 | 1DIK 332 |
| ATOM | 241 | N   | GLU | 37 | 0.784   | 43.000 | 18.039 | 1.00 | 39.04 | 1DIK 333 |
| ATOM | 242 | CA  | GLU | 37 | 1.380   | 43.287 | 19.347 | 1.00 | 39.87 | 1DIK 334 |
| ATOM | 243 | C   | GLU | 37 | 2.788   | 42.722 | 19.440 | 1.00 | 37.45 | 1DIK 335 |
| ATOM | 244 | O   | GLU | 37 | 3.506   | 42.963 | 20.411 | 1.00 | 38.65 | 1DIK 336 |
| ATOM | 245 | CB  | GLU | 37 | 0.530   | 42.693 | 20.478 | 1.00 | 43.47 | 1DIK 337 |
| ATOM | 246 | CG  | GLU | 37 | -0.796  | 43.401 | 20.721 | 1.00 | 47.80 | 1DIK 338 |
| ATOM | 247 | CD  | GLU | 37 | -0.616  | 44.863 | 21.087 | 1.00 | 51.75 | 1DIK 339 |
| ATOM | 248 | OE1 | GLU | 37 | 0.084   | 45.166 | 22.088 | 1.00 | 51.94 | 1DIK 340 |
| ATOM | 249 | OE2 | GLU | 37 | -1.183  | 45.710 | 20.357 | 1.00 | 55.20 | 1DIK 341 |
| ATOM | 250 | N   | SER | 38 | 3.174   | 41.961 | 18.425 | 1.00 | 35.62 | 1DIK 342 |
| ATOM | 251 | CA  | SER | 38 | 4.482   | 41.340 | 18.389 | 1.00 | 34.02 | 1DIK 343 |
| ATOM | 252 | C   | SER | 38 | 5.565   | 42.357 | 17.986 | 1.00 | 34.45 | 1DIK 344 |

FIG. 8-5

|      |     |     |     |    |        |        |        |      |       |          |
|------|-----|-----|-----|----|--------|--------|--------|------|-------|----------|
| ATOM | 253 | O   | SER | 38 | 5.428  | 43.061 | 16.985 | 1.00 | 35.65 | 1DIK 345 |
| ATOM | 254 | CB  | SER | 38 | 4.454  | 40.163 | 17.404 | 1.00 | 33.07 | 1DIK 346 |
| ATOM | 255 | OG  | SER | 38 | 5.561  | 39.292 | 17.583 | 1.00 | 28.90 | 1DIK 347 |
| ATOM | 256 | N   | VAL | 39 | 6.632  | 42.420 | 18.782 | 1.00 | 33.51 | 1DIK 348 |
| ATOM | 257 | CA  | VAL | 39 | 7.767  | 43.305 | 18.541 | 1.00 | 33.30 | 1DIK 349 |
| ATOM | 258 | C   | VAL | 39 | 8.539  | 42.760 | 17.327 | 1.00 | 33.54 | 1DIK 350 |
| ATOM | 259 | O   | VAL | 39 | 9.024  | 43.520 | 16.490 | 1.00 | 34.06 | 1DIK 351 |
| ATOM | 260 | CB  | VAL | 39 | 8.690  | 43.356 | 19.801 | 1.00 | 37.39 | 1DIK 352 |
| ATOM | 261 | CG1 | VAL | 39 | 9.833  | 44.331 | 19.602 | 1.00 | 39.93 | 1DIK 353 |
| ATOM | 262 | CG2 | VAL | 39 | 7.884  | 43.774 | 21.018 | 1.00 | 38.16 | 1DIK 354 |
| ATOM | 263 | N   | ILE | 40 | 8.645  | 41.434 | 17.239 | 1.00 | 32.27 | 1DIK 355 |
| ATOM | 264 | CA  | ILE | 40 | 9.323  | 40.766 | 16.127 | 1.00 | 29.21 | 1DIK 356 |
| ATOM | 265 | C   | ILE | 40 | 8.262  | 40.386 | 15.083 | 1.00 | 28.46 | 1DIK 357 |
| ATOM | 266 | O   | ILE | 40 | 7.195  | 39.885 | 15.440 | 1.00 | 26.34 | 1DIK 358 |
| ATOM | 267 | CB  | ILE | 40 | 10.059 | 39.494 | 16.624 | 1.00 | 29.64 | 1DIK 359 |
| ATOM | 268 | CG1 | ILE | 40 | 11.147 | 39.900 | 17.631 | 1.00 | 30.03 | 1DIK 360 |
| ATOM | 269 | CG2 | ILE | 40 | 10.633 | 38.721 | 15.436 | 1.00 | 26.81 | 1DIK 361 |
| ATOM | 270 | CD1 | ILE | 40 | 11.771 | 38.777 | 18.437 | 1.00 | 26.07 | 1DIK 362 |
| ATOM | 271 | N   | SER | 41 | 8.548  | 40.626 | 13.806 | 1.00 | 29.09 | 1DIK 363 |
| ATOM | 272 | CA  | SER | 41 | 7.594  | 40.302 | 12.737 | 1.00 | 30.76 | 1DIK 364 |
| ATOM | 273 | C   | SER | 41 | 7.310  | 38.798 | 12.646 | 1.00 | 29.37 | 1DIK 365 |
| ATOM | 274 | O   | SER | 41 | 8.234  | 37.990 | 12.552 | 1.00 | 28.10 | 1DIK 366 |
| ATOM | 275 | CB  | SER | 41 | 8.113  | 40.802 | 11.386 | 1.00 | 29.99 | 1DIK 367 |
| ATOM | 276 | OG  | SER | 41 | 7.148  | 40.555 | 10.379 | 1.00 | 32.70 | 1DIK 368 |
| ATOM | 227 | N   | PRO | 42 | 6.021  | 38.410 | 12.664 | 1.00 | 31.46 | 1DIK 369 |
| ATOM | 278 | CA  | PRO | 42 | 5.577  | 37.009 | 12.592 | 1.00 | 30.99 | 1DIK 370 |
| ATOM | 279 | C   | PRO | 42 | 5.915  | 36.287 | 11.285 | 1.00 | 31.80 | 1DIK 371 |
| ATOM | 280 | O   | PRO | 42 | 5.950  | 35.062 | 11.241 | 1.00 | 34.31 | 1DIK 372 |
| ATOM | 281 | CB  | PRO | 42 | 4.056  | 37.109 | 12.791 | 1.00 | 28.85 | 1DIK 373 |
| ATOM | 282 | CG  | PRO | 42 | 3.852  | 38.432 | 13.454 | 1.00 | 32.81 | 1DIK 374 |
| ATOM | 283 | CD  | PRO | 42 | 4.863  | 39.312 | 12.766 | 1.00 | 31.32 | 1DIK 375 |
| ATOM | 284 | N   | GLU | 43 | 6.160  | 37.047 | 10.226 | 1.00 | 34.83 | 1DIK 376 |
| ATOM | 285 | CA  | GLU | 43 | 6.467  | 36.483 | 8.917  | 1.00 | 36.61 | 1DIK 377 |
| ATOM | 286 | C   | GLU | 43 | 7.765  | 35.703 | 8.835  | 1.00 | 35.76 | 1DIK 378 |
| ATOM | 287 | O   | GLU | 43 | 8.757  | 36.046 | 9.480  | 1.00 | 37.48 | 1DIK 379 |
| ATOM | 288 | CB  | GLU | 43 | 6.516  | 37.586 | 7.867  | 1.00 | 45.46 | 1DIK 380 |
| ATOM | 289 | CG  | GLU | 43 | 5.236  | 38.394 | 7.734  | 1.00 | 61.52 | 1DIK 381 |
| ATOM | 290 | CD  | GLU | 43 | 5.488  | 39.889 | 7.891  | 1.00 | 71.53 | 1DIK 382 |
| ATOM | 291 | OE1 | GLU | 43 | 6.553  | 40.371 | 7.420  | 1.00 | 76.20 | 1DIK 383 |
| ATOM | 292 | OE2 | GLU | 43 | 4.624  | 40.581 | 8.487  | 1.00 | 75.49 | 1DIK 384 |
| ATOM | 293 | N   | VAL | 44 | 7.739  | 34.654 | 8.020  | 1.00 | 35.15 | 1DIK 385 |
| ATOM | 294 | CA  | VAL | 44 | 8.900  | 33.806 | 7.785  | 1.00 | 34.87 | 1DIK 386 |
| ATOM | 295 | C   | VAL | 44 | 9.900  | 34.708 | 7.060  | 1.00 | 36.04 | 1DIK 387 |
| ATOM | 296 | O   | VAL | 44 | 9.570  | 35.289 | 6.031  | 1.00 | 37.59 | 1DIK 388 |
| ATOM | 297 | CB  | VAL | 44 | 8.529  | 32.582 | 6.883  | 1.00 | 33.01 | 1DIK 389 |
| ATOM | 298 | CG1 | VAL | 44 | 9.757  | 31.698 | 6.657  | 1.00 | 28.63 | 1DIK 390 |
| ATOM | 299 | CG2 | VAL | 44 | 7.398  | 31.773 | 7.522  | 1.00 | 26.10 | 1DIK 391 |
| ATOM | 300 | N   | PRO | 45 | 11.131 | 34.837 | 7.590  | 1.00 | 38.73 | 1DIK 392 |
| ATOM | 301 | CA  | PRO | 45 | 12.171 | 35.680 | 6.996  | 1.00 | 40.95 | 1DIK 393 |
| ATOM | 302 | C   | PRO | 45 | 12.492 | 35.362 | 5.558  | 1.00 | 44.42 | 1DIK 394 |
| ATOM | 303 | O   | PRO | 45 | 12.492 | 34.196 | 5.149  | 1.00 | 44.24 | 1DIK 395 |
| ATOM | 304 | CB  | PRO | 45 | 13.382 | 35.431 | 7.893  | 1.00 | 39.65 | 1DIK 396 |
| ATOM | 305 | CG  | PRO | 45 | 12.775 | 35.101 | 9.201  | 1.00 | 40.04 | 1DIK 397 |
| ATOM | 306 | CD  | PRO | 45 | 11.645 | 34.183 | 8.806  | 1.00 | 40.88 | 1DIK 398 |
| ATOM | 307 | N   | ALA | 46 | 12.769 | 36.418 | 4.798  | 1.00 | 48.71 | 1DIK 399 |
| ATOM | 308 | CA  | ALA | 46 | 13.127 | 36.292 | 3.396  | 1.00 | 50.25 | 1DIK 400 |
| ATOM | 309 | C   | ALA | 46 | 14.456 | 35.555 | 3.435  | 1.00 | 49.80 | 1DIK 401 |
| ATOM | 310 | O   | ALA | 46 | 15.326 | 35.906 | 4.229  | 1.00 | 49.90 | 1DIK 402 |
| ATOM | 311 | CB  | ALA | 46 | 13.304 | 37.677 | 2.777  | 1.00 | 50.74 | 1DIK 403 |
| ATOM | 312 | N   | GLY | 47 | 14.613 | 34.533 | 2.600  | 1.00 | 47.13 | 1DIK 404 |
| ATOM | 313 | CA  | GLY | 47 | 15.862 | 33.789 | 2.596  | 1.00 | 41.93 | 1DIK 405 |
| ATOM | 314 | C   | GLY | 47 | 15.863 | 32.579 | 3.520  | 1.00 | 39.94 | 1DIK 406 |
| ATOM | 315 | O   | GLY | 47 | 16.893 | 31.906 | 3.681  | 1.00 | 36.72 | 1DIK 407 |
| ATOM | 316 | N   | CYS | 48 | 14.720 | 32.300 | 4.141  | 1.00 | 36.56 | 1DIK 408 |
| ATOM | 317 | CA  | CYS | 48 | 14.609 | 31.139 | 5.012  | 1.00 | 34.94 | 1DIK 409 |
| ATOM | 318 | C   | CYS | 48 | 13.549 | 30.237 | 4.434  | 1.00 | 34.24 | 1DIK 410 |

FIG. 8-6

|      |     |     |     |    |        |        |        |      |       |          |
|------|-----|-----|-----|----|--------|--------|--------|------|-------|----------|
| ATOM | 319 | O   | CYS | 48 | 12.669 | 30.684 | 3.693  | 1.00 | 33.85 | 1DIK 411 |
| ATOM | 320 | CB  | CYS | 48 | 14.232 | 31.528 | 6.435  | 1.00 | 29.09 | 1DIK 412 |
| ATOM | 321 | SG  | CYS | 48 | 15.506 | 32.511 | 7.263  | 1.00 | 30.08 | 1DIK 413 |
| ATOM | 322 | N   | ARG | 49 | 13.643 | 28.962 | 4.775  | 1.00 | 32.71 | 1DIK 414 |
| ATOM | 323 | CA  | ARG | 49 | 12.707 | 27.965 | 4.293  | 1.00 | 31.47 | 1DIK 415 |
| ATOM | 324 | C   | ARG | 49 | 12.307 | 27.093 | 5.496  | 1.00 | 29.98 | 1DIK 416 |
| ATOM | 325 | O   | ARG | 49 | 13.181 | 26.547 | 6.196  | 1.00 | 24.89 | 1DIK 417 |
| ATOM | 326 | CB  | ARG | 49 | 13.424 | 27.153 | 3.219  | 1.00 | 34.59 | 1DIK 418 |
| ATOM | 327 | CG  | ARG | 49 | 12.615 | 26.104 | 2.516  | 1.00 | 45.38 | 1DIK 419 |
| ATOM | 328 | CD  | ARG | 49 | 13.520 | 25.363 | 1.547  | 1.00 | 50.77 | 1DIK 420 |
| ATOM | 329 | NE  | ARG | 49 | 14.760 | 24.899 | 2.185  | 1.00 | 53.82 | 1DIK 421 |
| ATOM | 330 | CZ  | ARG | 49 | 15.024 | 23.626 | 2.479  | 1.00 | 54.48 | 1DIK 422 |
| ATOM | 331 | NH1 | ARG | 49 | 14.132 | 22.680 | 2.199  | 1.00 | 54.38 | 1DIK 223 |
| ATOM | 332 | NH2 | ARG | 49 | 16.178 | 23.297 | 3.054  | 1.00 | 53.78 | 1DIK 424 |
| ATOM | 333 | N   | VAL | 50 | 11.001 | 26.975 | 5.747  | 1.00 | 26.52 | 1DIK 425 |
| ATOM | 334 | CA  | VAL | 50 | 10.510 | 26.167 | 6.865  | 1.00 | 23.44 | 1DIK 426 |
| ATOM | 335 | C   | VAL | 50 | 10.718 | 24.689 | 6.555  | 1.00 | 22.87 | 1DIK 427 |
| ATOM | 336 | O   | VAL | 50 | 10.383 | 24.223 | 5.472  | 1.00 | 24.36 | 1DIK 428 |
| ATOM | 337 | CB  | VAL | 50 | 9.012  | 26.441 | 7.157  | 1.00 | 22.39 | 1DIK 429 |
| ATOM | 338 | CG1 | VAL | 50 | 8.518  | 25.564 | 8.318  | 1.00 | 22.32 | 1DIK 430 |
| ATOM | 339 | CG2 | VAL | 50 | 8.817  | 27.903 | 7.506  | 1.00 | 18.72 | 1DIK 431 |
| ATOM | 340 | N   | THR | 51 | 11.278 | 23.958 | 7.510  | 1.00 | 23.31 | 1DIK 432 |
| ATOM | 341 | CA  | THR | 51 | 11.533 | 22.536 | 7.341  | 1.00 | 23.80 | 1DIK 433 |
| ATOM | 342 | C   | THR | 51 | 10.764 | 21.649 | 8.332  | 1.00 | 25.07 | 1DIK 434 |
| ATOM | 343 | O   | THR | 51 | 10.821 | 20.422 | 8.242  | 1.00 | 25.40 | 1DIK 435 |
| ATOM | 344 | CB  | THR | 51 | 13.042 | 22.240 | 7.471  | 1.00 | 26.51 | 1DIK 436 |
| ATOM | 345 | OG1 | THR | 51 | 13.516 | 22.691 | 8.745  | 1.00 | 27.16 | 1DIK 437 |
| ATOM | 346 | OG2 | THR | 51 | 13.823 | 22.954 | 6.378  | 1.00 | 26.68 | 1DIK 438 |
| ATOM | 347 | N   | PHE | 52 | 10.052 | 22.267 | 9.274  | 1.00 | 23.82 | 1DIK 439 |
| ATOM | 348 | CA  | PHE | 52 | 9.280  | 21.543 | 10.285 | 1.00 | 18.63 | 1DIK 440 |
| ATOM | 349 | C   | PHE | 52 | 8.264  | 22.527 | 10.821 | 1.00 | 19.14 | 1DIK 441 |
| ATOM | 350 | O   | PHE | 52 | 8.559  | 23.710 | 10.993 | 1.00 | 19.73 | 1DIK 442 |
| ATOM | 351 | CB  | PHE | 52 | 10.211 | 21.081 | 11.425 | 1.00 | 17.98 | 1DIK 443 |
| ATOM | 352 | CG  | PHE | 52 | 9.497  | 20.552 | 12.661 | 1.00 | 19.23 | 1DIK 444 |
| ATOM | 353 | CD1 | PHE | 52 | 9.006  | 21.424 | 13.636 | 1.00 | 18.19 | 1DIK 445 |
| ATOM | 354 | CD2 | PHE | 52 | 9.328  | 19.185 | 12.854 | 1.00 | 18.71 | 1DIK 446 |
| ATOM | 355 | CE1 | PHE | 52 | 8.359  | 20.941 | 14.783 | 1.00 | 15.91 | 1DIK 447 |
| ATOM | 356 | CE2 | PHE | 52 | 8.682  | 18.690 | 14.001 | 1.00 | 20.50 | 1DIK 448 |
| ATOM | 357 | CZ  | PHE | 52 | 8.198  | 19.576 | 14.964 | 1.00 | 16.11 | 1DIK 449 |
| ATOM | 358 | N   | ALA | 53 | 7.061  | 22.053 | 11.072 | 1.00 | 16.93 | 1DIK 450 |
| ATOM | 359 | CA  | ALA | 53 | 6.045  | 22.910 | 11.647 | 1.00 | 19.01 | 1DIK 451 |
| ATOM | 360 | C   | ALA | 53 | 5.112  | 22.048 | 12.468 | 1.00 | 19.84 | 1DIK 452 |
| ATOM | 361 | O   | ALA | 53 | 4.647  | 21.002 | 12.011 | 1.00 | 21.85 | 1DIK 453 |
| ATOM | 362 | CB  | ALA | 53 | 5.265  | 23.658 | 10.563 | 1.00 | 17.27 | 1DIK 454 |
| ATOM | 363 | N   | GLN | 54 | 4.866  | 22.479 | 13.696 | 1.00 | 19.97 | 1DIK 455 |
| ATOM | 364 | CA  | GLN | 54 | 3.924  | 21.801 | 14.570 | 1.00 | 16.77 | 1DIK 456 |
| ATOM | 365 | C   | GLN | 54 | 2.963  | 22.820 | 15.172 | 1.00 | 13.22 | 1DIK 457 |
| ATOM | 366 | O   | GLN | 54 | 3.370  | 23.901 | 15.592 | 1.00 | 15.19 | 1DIK 458 |
| ATOM | 367 | CB  | GLN | 54 | 4.619  | 21.072 | 15.711 | 1.00 | 18.35 | 1DIK 459 |
| ATOM | 368 | CG  | GLN | 54 | 3.595  | 20.527 | 16.697 | 1.00 | 24.84 | 1DIK 460 |
| ATOM | 369 | CD  | GLN | 54 | 4.138  | 19.486 | 17.607 | 1.00 | 27.27 | 1DIK 461 |
| ATOM | 370 | OE1 | GLN | 54 | 4.891  | 18.614 | 17.195 | 1.00 | 28.71 | 1DIK 462 |
| ATOM | 371 | NE2 | GLN | 54 | 3.758  | 19.561 | 18.863 | 1.00 | 33.46 | 1DIK 463 |
| ATOM | 372 | N   | VAL | 55 | 1.686  | 22.486 | 15.206 | 1.00 | 13.93 | 1DIK 464 |
| ATOM | 373 | CA  | VAL | 55 | 0.721  | 23.372 | 15.822 | 1.00 | 14.13 | 1DIK 465 |
| ATOM | 374 | C   | VAL | 55 | 0.094  | 22.604 | 16.990 | 1.00 | 14.94 | 1DIK 466 |
| ATOM | 375 | O   | VAL | 55 | -0.192 | 21.404 | 16.878 | 1.00 | 13.02 | 1DIK 467 |
| ATOM | 376 | CB  | VAL | 55 | -0.377 | 23.842 | 14.812 | 1.00 | 14.68 | 1DIK 468 |
| ATOM | 377 | CG1 | VAL | 55 | -1.062 | 22.645 | 14.155 | 1.00 | 8.55  | 1DIK 469 |
| ATOM | 378 | CG2 | VAL | 55 | -1.407 | 24.739 | 15.521 | 1.00 | 15.11 | 1DIK 470 |
| ATOM | 379 | N   | LEU | 56 | -0.076 | 23.292 | 18.111 | 1.00 | 11.84 | 1DIK 471 |
| ATOM | 380 | CA  | LEU | 56 | -0.719 | 22.731 | 19.278 | 1.00 | 11.96 | 1DIK 472 |
| ATOM | 381 | C   | LEU | 56 | -1.896 | 23.694 | 19.426 | 1.00 | 14.67 | 1DIK 473 |
| ATOM | 382 | O   | LEU | 56 | -1.721 | 24.903 | 19.647 | 1.00 | 13.79 | 1DIK 474 |
| ATOM | 383 | CB  | LEU | 56 | 0.197  | 22.771 | 20.503 | 1.00 | 17.28 | 1DIK 475 |
| ATOM | 384 | CG  | LEU | 56 | -0.513 | 22.538 | 21.842 | 1.00 | 17.00 | 1DIK 476 |

FIG. 8-7

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 385 | CD1 | LEU | 56 | -1.065  | 21.122 | 21.949 | 1.00 | 13.43 | 1DIK 477 |
| ATOM | 386 | CD2 | LEU | 56 | 0.472   | 22.817 | 22.938 | 1.00 | 17.28 | 1DIK 478 |
| ATOM | 387 | N   | SER | 57 | -3.095  | 23.162 | 19.277 | 1.00 | 16.89 | 1DIK 479 |
| ATOM | 388 | CA  | SER | 57 | -4.289  | 23.976 | 19.329 | 1.00 | 16.37 | 1DIK 480 |
| ATOM | 389 | C   | SER | 57 | -5.260  | 23.544 | 20.411 | 1.00 | 16.34 | 1DIK 481 |
| ATOM | 390 | O   | SER | 57 | -5.341  | 22.363 | 20.760 | 1.00 | 18.09 | 1DIK 482 |
| ATOM | 391 | CB  | SER | 57 | -4.984  | 23.906 | 17.960 | 1.00 | 15.08 | 1DIK 483 |
| ATOM | 392 | OG  | SER | 57 | -6.256  | 24.527 | 17.966 | 1.00 | 15.23 | 1DIK 484 |
| ATOM | 393 | N   | ARG | 58 | -5.986  | 24.514 | 20.946 | 1.00 | 14.89 | 1DIK 485 |
| ATOM | 394 | CA  | ARG | 58 | -7.015  | 24.257 | 21.934 | 1.00 | 16.34 | 1DIK 486 |
| ATOM | 395 | C   | ARG | 58 | -8.299  | 24.104 | 21.100 | 1.00 | 20.75 | 1DIK 487 |
| ATOM | 396 | O   | ARG | 58 | -8.352  | 24.546 | 19.940 | 1.00 | 20.55 | 1DIK 488 |
| ATOM | 397 | CB  | ARG | 58 | -7.159  | 25.457 | 22.874 | 1.00 | 14.15 | 1DIK 489 |
| ATOM | 398 | CG  | ARG | 58 | -8.315  | 25.320 | 23.835 | 1.00 | 13.80 | 1DIK 490 |
| ATOM | 399 | CD  | ARG | 58 | -8.411  | 26.468 | 24.791 | 1.00 | 15.28 | 1DIK 491 |
| ATOM | 400 | NE  | ARG | 58 | -9.551  | 26.299 | 25.692 | 1.00 | 16.96 | 1DIK 492 |
| ATOM | 401 | CZ  | ARG | 58 | -10.218 | 27.306 | 26.253 | 1.00 | 17.74 | 1DIK 493 |
| ATOM | 402 | NH1 | ARG | 58 | -9.863  | 28.564 | 26.021 | 1.00 | 19.32 | 1DIK 494 |
| ATOM | 403 | NH2 | ARG | 58 | -11.239 | 27.055 | 27.051 | 1.00 | 14.92 | 1DIK 495 |
| ATOM | 404 | N   | HIS | 59 | -9.326  | 23.478 | 21.673 | 1.00 | 22.89 | 1DIK 496 |
| ATOM | 405 | CA  | HIS | 59 | -10.620 | 23.324 | 20.993 | 1.00 | 21.80 | 1DIK 497 |
| ATOM | 406 | C   | HIS | 59 | -11.286 | 24.703 | 20.795 | 1.00 | 21.30 | 1DIK 498 |
| ATOM | 407 | O   | HIS | 59 | -10.860 | 25.693 | 21.403 | 1.00 | 20.60 | 1DIK 499 |
| ATOM | 408 | CB  | HIS | 59 | -11.537 | 22.407 | 21.809 | 1.00 | 20.25 | 1DIK 500 |
| ATOM | 409 | CG  | HIS | 59 | -11.767 | 22.867 | 23.218 | 1.00 | 21.97 | 1DIK 501 |
| ATOM | 410 | ND1 | HIS | 59 | -12.523 | 23.979 | 23.527 | 1.00 | 21.32 | 1DIK 502 |
| ATOM | 411 | CD2 | HIS | 59 | -11.350 | 22.356 | 24.400 | 1.00 | 18.14 | 1DIK 503 |
| ATOM | 412 | CE1 | HIS | 59 | -12.564 | 24.132 | 24.838 | 1.00 | 18.77 | 1DIK 504 |
| ATOM | 413 | NE2 | HIS | 59 | -11.860 | 23.161 | 25.390 | 1.00 | 19.93 | 1DIK 505 |
| ATOM | 414 | N   | GLY | 60 | -12.318 | 24.782 | 19.957 | 1.00 | 20.66 | 1DIK 506 |
| ATOM | 415 | CA  | GLY | 60 | -12.976 | 26.063 | 19.736 | 1.00 | 20.29 | 1DIK 507 |
| ATOM | 416 | C   | GLY | 60 | -13.950 | 26.442 | 20.847 | 1.00 | 21.51 | 1DIK 508 |
| ATOM | 417 | O   | GLY | 60 | -14.042 | 25.737 | 21.856 | 1.00 | 21.15 | 1DIK 509 |
| ATOM | 418 | N   | ALA | 61 | -14.669 | 27.549 | 20.659 | 1.00 | 20.16 | 1DIK 510 |
| ATOM | 419 | CA  | ALA | 61 | -15.664 | 28.047 | 21.618 | 1.00 | 20.00 | 1DIK 511 |
| ATOM | 420 | C   | ALA | 61 | -16.735 | 26.996 | 21.888 | 1.00 | 20.35 | 1DIK 512 |
| ATOM | 421 | O   | ALA | 61 | -17.247 | 26.366 | 20.954 | 1.00 | 21.69 | 1DIK 513 |
| ATOM | 422 | CB  | ALA | 61 | -16.326 | 29.320 | 21.079 | 1.00 | 15.53 | 1DIK 514 |
| ATOM | 423 | N   | ARG | 62 | -17.077 | 26.823 | 23.161 | 1.00 | 19.64 | 1DIK 515 |
| ATOM | 424 | CA  | ARG | 62 | -18.070 | 25.832 | 23.581 | 1.00 | 19.57 | 1DIK 516 |
| ATOM | 425 | C   | ARG | 62 | -19.162 | 26.420 | 24.482 | 1.00 | 21.60 | 1DIK 517 |
| ATOM | 426 | O   | ARG | 62 | -19.079 | 27.574 | 24.932 | 1.00 | 18.58 | 1DIK 518 |
| ATOM | 427 | CB  | ARG | 62 | -17.378 | 24.703 | 24.346 | 1.00 | 15.11 | 1DIK 519 |
| ATOM | 428 | CG  | ARG | 62 | -16.505 | 25.211 | 25.486 | 1.00 | 17.39 | 1DIK 520 |
| ATOM | 429 | CD  | ARG | 62 | -16.371 | 24.195 | 26.609 | 1.00 | 22.59 | 1DIK 521 |
| ATOM | 430 | NE  | ARG | 62 | -15.570 | 24.726 | 27.711 | 1.00 | 23.06 | 1DIK 522 |
| ATOM | 431 | CZ  | ARG | 62 | -16.067 | 25.234 | 28.839 | 1.00 | 25.28 | 1DIK 523 |
| ATOM | 432 | NH1 | ARG | 62 | -17.379 | 25.272 | 29.052 | 1.00 | 28.41 | 1DIK 524 |
| ATOM | 433 | NH2 | ARG | 62 | -15.244 | 25.704 | 29.766 | 1.00 | 27.40 | 1DIK 525 |
| ATOM | 434 | N   | TYR | 63 | -20.193 | 25.619 | 24.726 | 1.00 | 23.53 | 1DIK 526 |
| ATOM | 435 | CA  | TYR | 63 | -21.280 | 26.004 | 25.615 | 1.00 | 25.54 | 1DIK 527 |
| ATOM | 436 | C   | TYR | 63 | -20.729 | 25.786 | 27.033 | 1.00 | 28.59 | 1DIK 528 |
| ATOM | 437 | O   | TYR | 63 | -19.646 | 25.206 | 27.200 | 1.00 | 28.67 | 1DIK 529 |
| ATOM | 438 | CB  | TYR | 63 | -22.481 | 25.082 | 25.394 | 1.00 | 24.63 | 1DIK 530 |
| ATOM | 439 | CG  | TYR | 63 | -23.192 | 25.300 | 24.082 | 1.00 | 29.77 | 1DIK 531 |
| ATOM | 440 | CD1 | TYR | 63 | -23.806 | 26.529 | 23.795 | 1.00 | 29.27 | 1DIK 532 |
| ATOM | 441 | CD2 | TYR | 63 | -23.237 | 24.290 | 23.116 | 1.00 | 27.48 | 1DIK 533 |
| ATOM | 442 | CE1 | TYR | 63 | -24.444 | 26.748 | 22.576 | 1.00 | 31.57 | 1DIK 534 |
| ATOM | 443 | CE2 | TYR | 63 | -23.867 | 24.495 | 21.895 | 1.00 | 26.46 | 1DIK 535 |
| ATOM | 444 | CZ  | TYR | 63 | -24.468 | 25.727 | 21.626 | 1.00 | 34.26 | 1DIK 536 |
| ATOM | 445 | OH  | TYR | 63 | -25.067 | 25.950 | 20.398 | 1.00 | 35.58 | 1DIK 537 |
| ATOM | 446 | N   | PRO | 64 | -21.444 | 26.254 | 28.076 | 1.00 | 31.03 | 1DIK 538 |
| ATOM | 447 | CA  | PRO | 64 | -20.879 | 26.003 | 29.407 | 1.00 | 31.84 | 1DIK 539 |
| ATOM | 448 | C   | PRO | 64 | -20.849 | 24.482 | 29.625 | 1.00 | 32.43 | 1DIK 540 |
| ATOM | 449 | O   | PRO | 64 | -21.547 | 23.728 | 28.932 | 1.00 | 30.67 | 1DIK 541 |
| ATOM | 450 | CB  | PRO | 64 | -21.891 | 26.670 | 30.342 | 1.00 | 27.12 | 1DIK 542 |

FIG. 8-8



In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 451 | CG  | PRO | 64 | -22.524 | 27.706 | 29.487 | 1.00 | 30.89 | 1DIK 543 |
| ATOM | 452 | CD  | PRO | 64 | -22.706 | 27.004 | 28.181 | 1.00 | 27.90 | 1DIK 544 |
| ATOM | 453 | N   | THR | 65 | -20.042 | 24.011 | 30.564 | 1.00 | 35.27 | 1DIK 545 |
| ATOM | 454 | CA  | THR | 65 | -20.038 | 22.579 | 30.830 | 1.00 | 37.08 | 1DIK 546 |
| ATOM | 455 | C   | THR | 65 | -21.375 | 22.333 | 31.507 | 1.00 | 38.68 | 1DIK 547 |
| ATOM | 456 | O   | THR | 65 | -21.897 | 23.224 | 32.185 | 1.00 | 35.35 | 1DIK 548 |
| ATOM | 457 | CB  | THR | 65 | -18.897 | 22.170 | 31.774 | 1.00 | 35.91 | 1DIK 549 |
| ATOM | 458 | OG1 | THR | 65 | -18.997 | 22.906 | 32.999 | 1.00 | 40.63 | 1DIK 550 |
| ATOM | 459 | CG2 | THR | 65 | -17.544 | 22.438 | 31.116 | 1.00 | 35.54 | 1DIK 551 |
| ATOM | 460 | N   | ASP | 66 | -21.933 | 21.141 | 31.329 | 1.00 | 44.49 | 1DIK 552 |
| ATOM | 461 | CA  | ASP | 66 | -23.222 | 20.806 | 31.935 | 1.00 | 48.12 | 1DIK 553 |
| ATOM | 462 | C   | ASP | 66 | -23.305 | 21.205 | 33.418 | 1.00 | 48.96 | 1DIK 554 |
| ATOM | 463 | O   | ASP | 66 | -24.299 | 21.789 | 33.858 | 1.00 | 48.33 | 1DIK 555 |
| ATOM | 464 | CB  | ASP | 66 | -23.513 | 19.309 | 31.782 | 1.00 | 50.94 | 1DIK 556 |
| ATOM | 465 | CG  | ASP | 66 | -24.974 | 18.977 | 32.030 | 1.00 | 54.72 | 1DIK 557 |
| ATOM | 466 | OD1 | ASP | 66 | -25.838 | 19.495 | 31.280 | 1.00 | 55.38 | 1DIK 558 |
| ATOM | 467 | OD2 | ASP | 66 | -25.255 | 18.206 | 32.977 | 1.00 | 55.13 | 1DIK 559 |
| ATOM | 468 | N   | SER | 67 | -22.262 | 20.895 | 34.180 | 1.00 | 47.71 | 1DIK 560 |
| ATOM | 469 | CA  | SER | 67 | -22.233 | 21.247 | 35.587 | 1.00 | 46.65 | 1DIK 561 |
| ATOM | 470 | C   | SER | 67 | -22.525 | 22.751 | 35.796 | 1.00 | 45.82 | 1DIK 562 |
| ATOM | 471 | O   | SER | 67 | -23.477 | 23.102 | 36.501 | 1.00 | 47.90 | 1DIK 563 |
| ATOM | 472 | CB  | SER | 67 | -20.875 | 20.861 | 36.172 | 1.00 | 45.81 | 1DIK 564 |
| ATOM | 473 | OG  | SER | 67 | -20.769 | 21.285 | 37.516 | 1.00 | 51.18 | 1DIK 565 |
| ATOM | 474 | N   | LYS | 68 | -21.727 | 23.630 | 35.178 | 1.00 | 43.55 | 1DIK 566 |
| ATOM | 475 | CA  | LYS | 68 | -21.896 | 25.092 | 35.312 | 1.00 | 39.40 | 1DIK 567 |
| ATOM | 476 | C   | LYS | 68 | -23.201 | 25.626 | 34.753 | 1.00 | 37.75 | 1DIK 568 |
| ATOM | 477 | O   | LYS | 68 | -23.760 | 26.578 | 35.301 | 1.00 | 36.03 | 1DIK 569 |
| ATOM | 478 | CB  | LYS | 68 | -20.753 | 25.837 | 34.638 | 1.00 | 38.35 | 1DIK 570 |
| ATOM | 479 | CG  | LYS | 68 | -19.448 | 25.727 | 35.356 | 1.00 | 38.37 | 1DIK 571 |
| ATOM | 480 | CD  | LYS | 68 | -19.273 | 26.838 | 36.351 | 1.00 | 39.44 | 1DIK 572 |
| ATOM | 481 | CE  | LYS | 68 | -17.830 | 26.847 | 36.833 | 1.00 | 44.75 | 1DIK 573 |
| ATOM | 482 | NZ  | LYS | 68 | -17.376 | 28.222 | 37.198 | 1.00 | 52.53 | 1DIK 574 |
| ATOM | 483 | N   | GLY | 69 | -23.675 | 25.022 | 33.664 | 1.00 | 35.27 | 1DIK 575 |
| ATOM | 484 | CA  | GLY | 69 | -24.928 | 25.439 | 33.058 | 1.00 | 38.22 | 1DIK 576 |
| ATOM | 485 | C   | GLY | 69 | -26.073 | 25.358 | 34.054 | 1.00 | 41.32 | 1DIK 577 |
| ATOM | 486 | O   | GLY | 69 | -26.947 | 26.228 | 34.057 | 1.00 | 41.17 | 1DIK 578 |
| ATOM | 487 | N   | LYS | 70 | -26.059 | 24.313 | 34.891 | 1.00 | 42.89 | 1DIK 579 |
| ATOM | 488 | CA  | LYS | 70 | -27.071 | 24.092 | 35.934 | 1.00 | 44.02 | 1DIK 580 |
| ATOM | 489 | C   | LYS | 70 | -27.075 | 25.317 | 36.840 | 1.00 | 41.82 | 1DIK 581 |
| ATOM | 490 | O   | LYS | 70 | -28.110 | 25.959 | 37.043 | 1.00 | 42.10 | 1DIK 582 |
| ATOM | 491 | CB  | LYS | 70 | -26.717 | 22.892 | 36.835 | 1.00 | 49.51 | 1DIK 583 |
| ATOM | 492 | CG  | LYS | 70 | -26.624 | 21.513 | 36.195 | 1.00 | 53.72 | 1DIK 584 |
| ATOM | 493 | CD  | LYS | 70 | -27.976 | 20.920 | 35.867 | 1.00 | 56.10 | 1DIK 585 |
| ATOM | 494 | CE  | LYS | 70 | -27.822 | 19.444 | 35.549 | 1.00 | 56.46 | 1DIK 586 |
| ATOM | 495 | NZ  | LYS | 70 | -28.950 | 18.940 | 34.717 | 1.00 | 58.23 | 1DIK 587 |
| ATOM | 496 | N   | LYS | 71 | -25.901 | 25.625 | 37.382 | 1.00 | 34.23 | 1DIK 588 |
| ATOM | 497 | CA  | LYS | 71 | -25.735 | 26.752 | 38.278 | 1.00 | 32.70 | 1DIK 589 |
| ATOM | 498 | C   | LYS | 71 | -26.157 | 28.070 | 37.644 | 1.00 | 32.77 | 1DIK 590 |
| ATOM | 499 | O   | LYS | 71 | -26.839 | 28.867 | 38.283 | 1.00 | 34.19 | 1DIK 591 |
| ATOM | 500 | CB  | LYS | 71 | -24.294 | 26.814 | 38.743 | 1.00 | 34.32 | 1DIK 592 |
| ATOM | 501 | CG  | LYS | 71 | -23.848 | 25.549 | 39.465 | 1.00 | 38.15 | 1DIK 593 |
| ATOM | 502 | CD  | LYS | 71 | -22.365 | 25.606 | 39.758 | 1.00 | 42.92 | 1DIK 594 |
| ATOM | 503 | CE  | LYS | 71 | -21.904 | 24.450 | 40.639 | 1.00 | 47.95 | 1DIK 595 |
| ATOM | 504 | NZ  | LYS | 71 | -20.408 | 24.463 | 40.789 | 1.00 | 52.26 | 1DIK 596 |
| ATOM | 505 | N   | TYR | 72 | -25.764 | 28.298 | 36.393 | 1.00 | 31.69 | 1DIK 597 |
| ATOM | 506 | CA  | TYR | 72 | -26.128 | 29.526 | 35.676 | 1.00 | 31.22 | 1DIK 598 |
| ATOM | 507 | C   | TYR | 72 | -27.642 | 29.636 | 35.580 | 1.00 | 32.50 | 1DIK 599 |
| ATOM | 508 | O   | TYR | 72 | -28.232 | 30.663 | 35.916 | 1.00 | 31.20 | 1DIK 600 |
| ATOM | 509 | CB  | TYR | 72 | -25.550 | 29.524 | 34.254 | 1.00 | 28.26 | 1DIK 601 |
| ATOM | 510 | CG  | TYR | 72 | -24.045 | 29.680 | 34.164 | 1.00 | 24.30 | 1DIK 602 |
| ATOM | 511 | CD1 | TYR | 72 | -23.278 | 30.037 | 35.282 | 1.00 | 21.92 | 1DIK 603 |
| ATOM | 512 | CD2 | TYR | 72 | -23.383 | 29.475 | 32.951 | 1.00 | 26.92 | 1DIK 604 |
| ATOM | 513 | CE1 | TYR | 72 | -21.894 | 30.186 | 35.192 | 1.00 | 21.95 | 1DIK 605 |
| ATOM | 514 | CE2 | TYR | 72 | -21.999 | 29.623 | 32.850 | 1.00 | 25.41 | 1DIK 606 |
| ATOM | 515 | CZ  | TYR | 72 | -21.265 | 29.977 | 33.971 | 1.00 | 26.50 | 1DIK 607 |
| ATOM | 516 | OH  | TYR | 72 | -19.904 | 30.124 | 33.860 | 1.00 | 31.12 | 1DIK 608 |

FIG. 8-9



In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 517 | N   | SER | 73 | -28.262 | 28.562 | 35.114 | 1.00 | 34.91 | 1DIK 609 |
| ATOM | 518 | CA  | SER | 73 | -29.705 | 28.498 | 34.965 | 1.00 | 37.19 | 1DIK 610 |
| ATOM | 519 | C   | SER | 73 | -30.430 | 28.745 | 36.286 | 1.00 | 36.76 | 1DIK 611 |
| ATOM | 520 | O   | SER | 73 | -31.337 | 29.576 | 36.367 | 1.00 | 39.80 | 1DIK 612 |
| ATOM | 521 | CB  | SER | 73 | -30.100 | 27.133 | 34.421 | 1.00 | 37.82 | 1DIK 613 |
| ATOM | 522 | OG  | SER | 73 | -31.450 | 27.151 | 34.001 | 1.00 | 48.85 | 1DIK 614 |
| ATOM | 523 | N   | ALA | 74 | -30.027 | 28.017 | 37.321 | 1.00 | 36.25 | 1DIK 615 |
| ATOM | 524 | CA  | ALA | 74 | -30.627 | 28.143 | 38.645 | 1.00 | 32.75 | 1DIK 616 |
| ATOM | 525 | C   | ALA | 74 | -30.544 | 29.585 | 39.162 | 1.00 | 33.94 | 1DIK 617 |
| ATOM | 526 | O   | ALA | 74 | -31.544 | 30.156 | 39.607 | 1.00 | 37.43 | 1DIK 618 |
| ATOM | 527 | CB  | ALA | 74 | -29.929 | 27.196 | 39.612 | 1.00 | 27.83 | 1DIK 619 |
| ATOM | 528 | N   | LEU | 75 | -29.352 | 30.169 | 39.094 | 1.00 | 31.82 | 1DIK 620 |
| ATOM | 529 | CA  | LEU | 75 | -29.130 | 31.529 | 39.552 | 1.00 | 30.28 | 1DIK 621 |
| ATOM | 530 | C   | LEU | 75 | -30.043 | 32.526 | 38.855 | 1.00 | 32.18 | 1DIK 622 |
| ATOM | 531 | O   | LEU | 75 | -30.553 | 33.460 | 39.483 | 1.00 | 33.24 | 1DIK 623 |
| ATOM | 532 | CB  | LEU | 75 | -27.669 | 31.929 | 39.343 | 1.00 | 27.09 | 1DIK 624 |
| ATOM | 533 | CG  | LEU | 75 | -27.340 | 33.380 | 39.705 | 1.00 | 31.49 | 1DIK 625 |
| ATOM | 534 | CD1 | LEU | 75 | -27.680 | 33.616 | 41.182 | 1.00 | 32.22 | 1DIK 626 |
| ATOM | 535 | CD2 | LEU | 75 | -25.871 | 33.687 | 39.422 | 1.00 | 28.98 | 1DIK 627 |
| ATOM | 536 | N   | ILE | 76 | -30.253 | 32.334 | 37.559 | 1.00 | 34.42 | 1DIK 628 |
| ATOM | 537 | CA  | ILE | 76 | -31.107 | 33.235 | 36.800 | 1.00 | 35.51 | 1DIK 629 |
| ATOM | 538 | C   | ILE | 76 | -32.581 | 33.100 | 37.187 | 1.00 | 38.20 | 1DIK 630 |
| ATOM | 539 | O   | ILE | 76 | -33.287 | 34.104 | 37.290 | 1.00 | 37.73 | 1DIK 631 |
| ATOM | 540 | CB  | ILE | 76 | -30.897 | 33.040 | 35.271 | 1.00 | 35.44 | 1DIK 632 |
| ATOM | 541 | CG1 | ILE | 76 | -29.543 | 33.649 | 34.872 | 1.00 | 32.79 | 1DIK 633 |
| ATOM | 542 | CG2 | ILE | 76 | -32.051 | 33.665 | 34.467 | 1.00 | 30.04 | 1DIK 634 |
| ATOM | 543 | CD1 | ILE | 76 | -29.180 | 33.468 | 33.407 | 1.00 | 32.29 | 1DIK 635 |
| ATOM | 544 | N   | GLU | 77 | -33.050 | 31.876 | 37.409 | 1.00 | 41.02 | 1DIK 636 |
| ATOM | 545 | CA  | GLU | 77 | -34.440 | 31.683 | 37.801 | 1.00 | 45.17 | 1DIK 637 |
| ATOM | 546 | C   | GLU | 77 | -34.630 | 32.291 | 39.166 | 1.00 | 45.15 | 1DIK 638 |
| ATOM | 547 | O   | GLU | 77 | -35.655 | 32.926 | 39.434 | 1.00 | 46.76 | 1DIK 639 |
| ATOM | 548 | CB  | GLU | 77 | -34.800 | 30.209 | 37.861 | 1.00 | 51.95 | 1DIK 640 |
| ATOM | 549 | CG  | GLU | 77 | -34.891 | 29.564 | 36.499 | 1.00 | 66.31 | 1DIK 641 |
| ATOM | 550 | CD  | GLU | 77 | -35.578 | 28.203 | 36.531 | 1.00 | 74.99 | 1DIK 642 |
| ATOM | 551 | OE1 | GLU | 77 | -35.736 | 27.633 | 37.642 | 1.00 | 78.28 | 1DIK 643 |
| ATOM | 552 | OE2 | GLU | 77 | -35.960 | 27.702 | 35.443 | 1.00 | 79.43 | 1DIK 644 |
| ATOM | 553 | N   | GLU | 78 | -33.631 | 32.098 | 40.025 | 1.00 | 43.62 | 1DIK 645 |
| ATOM | 554 | CA  | GLU | 78 | -33.667 | 32.631 | 41.378 | 1.00 | 41.02 | 1DIK 646 |
| ATOM | 555 | C   | GLU | 78 | -33.758 | 34.155 | 41.364 | 1.00 | 38.09 | 1DIK 647 |
| ATOM | 556 | O   | GLU | 78 | -34.518 | 34.733 | 42.134 | 1.00 | 37.93 | 1DIK 648 |
| ATOM | 557 | CB  | GLU | 78 | -32.445 | 32.185 | 42.175 | 1.00 | 41.48 | 1DIK 649 |
| ATOM | 558 | CG  | GLU | 78 | -32.538 | 32.616 | 43.621 | 1.00 | 49.04 | 1DIK 650 |
| ATOM | 559 | CD  | GLU | 78 | -31.261 | 32.413 | 44.414 | 1.00 | 53.16 | 1DIK 651 |
| ATOM | 560 | OE1 | GLU | 78 | -30.551 | 31.404 | 44.174 | 1.00 | 56.49 | 1DIK 652 |
| ATOM | 561 | OE2 | GLU | 78 | -30.977 | 33.272 | 45.283 | 1.00 | 50.49 | 1DIK 653 |
| ATOM | 562 | N   | ILE | 79 | -32.989 | 34.810 | 40.501 | 1.00 | 36.46 | 1DIK 654 |
| ATOM | 563 | CA  | ILE | 79 | -33.059 | 36.265 | 40.400 | 1.00 | 37.33 | 1DIK 655 |
| ATOM | 564 | C   | ILE | 79 | -34.446 | 36.672 | 39.897 | 1.00 | 41.12 | 1DIK 656 |
| ATOM | 565 | O   | ILE | 79 | -35.034 | 37.648 | 40.374 | 1.00 | 43.28 | 1DIK 657 |
| ATOM | 566 | CB  | ILE | 79 | -32.003 | 36.829 | 39.418 | 1.00 | 36.22 | 1DIK 658 |
| ATOM | 567 | CG1 | ILE | 79 | -30.606 | 36.694 | 40.031 | 1.00 | 32.53 | 1DIK 659 |
| ATOM | 568 | CG2 | ILE | 79 | -32.341 | 38.300 | 39.057 | 1.00 | 30.60 | 1DIK 660 |
| ATOM | 569 | CD1 | ILE | 79 | -29.481 | 37.029 | 39.088 | 1.00 | 28.25 | 1DIK 661 |
| ATOM | 570 | N   | GLN | 80 | -34.965 | 35.918 | 38.934 | 1.00 | 41.53 | 1DIK 662 |
| ATOM | 571 | CA  | GLN | 80 | -36.276 | 36.201 | 38.375 | 1.00 | 43.98 | 1DIK 663 |
| ATOM | 572 | C   | GLN | 80 | -37.399 | 36.074 | 39.392 | 1.00 | 48.10 | 1DIK 664 |
| ATOM | 573 | O   | GLN | 80 | -38.450 | 36.687 | 39.228 | 1.00 | 51.13 | 1DIK 665 |
| ATOM | 574 | CB  | GLN | 80 | -36.549 | 35.290 | 37.186 | 1.00 | 40.14 | 1DIK 666 |
| ATOM | 575 | CG  | GLN | 80 | -35.828 | 35.733 | 35.933 | 1.00 | 41.38 | 1DIK 667 |
| ATOM | 576 | CD  | GLN | 80 | -35.983 | 34.751 | 34.792 | 1.00 | 42.01 | 1DIK 668 |
| ATOM | 577 | OE1 | GLN | 80 | -36.303 | 33.583 | 35.000 | 1.00 | 43.95 | 1DIK 669 |
| ATOM | 578 | NE2 | GLN | 80 | -35.753 | 35.220 | 33.577 | 1.00 | 40.77 | 1DIK 670 |
| ATOM | 579 | N   | GLN | 81 | -37.186 | 35.281 | 40.437 | 1.00 | 51.52 | 1DIK 671 |
| ATOM | 580 | CA  | GLN | 81 | -38.205 | 35.105 | 41.468 | 1.00 | 54.70 | 1DIK 672 |
| ATOM | 581 | C   | GLN | 81 | -38.099 | 36.109 | 42.611 | 1.00 | 54.45 | 1DIK 673 |
| ATOM | 582 | O   | GLN | 81 | -39.089 | 36.717 | 43.004 | 1.00 | 57.66 | 1DIK 674 |

FIG. 8-10

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 583 | CB  | GLN | 81 | -38.139 | 33.699 | 42.050 | 1.00 | 58.18 | 1DIK 675 |
| ATOM | 584 | CG  | GLN | 81 | -38.560 | 32.607 | 41.093 | 1.00 | 70.29 | 1DIK 676 |
| ATOM | 585 | CD  | GLN | 81 | -38.505 | 31.233 | 41.746 | 1.00 | 78.03 | 1DIK 677 |
| ATOM | 586 | OE1 | GLN | 81 | -39.099 | 31.014 | 42.809 | 1.00 | 80.87 | 1DIK 678 |
| ATOM | 587 | NE2 | GLN | 81 | -37.790 | 30.300 | 41.116 | 1.00 | 80.03 | 1DIK 679 |
| ATOM | 588 | N   | ASN | 82 | -36.896 | 36.280 | 43.138 | 1.00 | 52.58 | 1DIK 680 |
| ATOM | 589 | CA  | ASN | 82 | -36.668 | 37.179 | 44.263 | 1.00 | 52.84 | 1DIK 681 |
| ATOM | 590 | C   | ASN | 82 | -36.717 | 38.688 | 44.013 | 1.00 | 53.31 | 1DIK 682 |
| ATOM | 591 | O   | ASN | 82 | -37.110 | 39.445 | 44.905 | 1.00 | 53.72 | 1DIK 683 |
| ATOM | 592 | CB  | ASN | 82 | -35.336 | 36.828 | 44.944 | 1.00 | 51.31 | 1DIK 684 |
| ATOM | 593 | CG  | ASN | 82 | -35.320 | 35.418 | 45.520 | 1.00 | 50.40 | 1DIK 685 |
| ATOM | 594 | OD1 | ASN | 82 | -36.250 | 34.629 | 45.312 | 1.00 | 46.50 | 1DIK 686 |
| ATOM | 595 | ND2 | ASN | 82 | -34.257 | 35.092 | 46.246 | 1.00 | 48.14 | 1DIK 687 |
| ATOM | 596 | N   | ALA | 83 | -36.316 | 39.133 | 42.823 | 1.00 | 55.26 | 1DIK 688 |
| ATOM | 597 | CA  | ALA | 83 | -36.300 | 40.566 | 42.518 | 1.00 | 54.90 | 1DIK 689 |
| ATOM | 598 | C   | ALA | 83 | -37.693 | 41.174 | 42.326 | 1.00 | 56.32 | 1DIK 690 |
| ATOM | 599 | O   | ALA | 83 | -38.545 | 40.619 | 41.617 | 1.00 | 52.96 | 1DIK 691 |
| ATOM | 600 | CB  | ALA | 83 | -35.417 | 40.846 | 41.296 | 1.00 | 51.72 | 1DIK 692 |
| ATOM | 601 | N   | THR | 84 | -37.905 | 42.320 | 42.974 | 1.00 | 58.60 | 1DIK 693 |
| ATOM | 602 | CA  | THR | 84 | -39.166 | 43.048 | 42.904 | 1.00 | 59.70 | 1DIK 694 |
| ATOM | 603 | C   | THR | 84 | -39.170 | 44.025 | 41.730 | 1.00 | 60.59 | 1DIK 695 |
| ATOM | 604 | O   | THR | 84 | -40.212 | 44.256 | 41.116 | 1.00 | 63.43 | 1DIK 696 |
| ATOM | 605 | CB  | THR | 84 | -39.452 | 43.835 | 44.223 | 1.00 | 61.01 | 1DIK 697 |
| ATOM | 606 | OG1 | THR | 84 | -38.308 | 44.638 | 44.574 | 1.00 | 61.94 | 1DIK 698 |
| ATOM | 607 | CG2 | THR | 84 | -39.786 | 42.871 | 45.375 | 1.00 | 57.54 | 1DIK 699 |
| ATOM | 608 | N   | THR | 85 | -38.011 | 44.595 | 41.410 | 1.00 | 60.26 | 1DIK 700 |
| ATOM | 609 | CA  | THR | 85 | -37.923 | 45.550 | 40.309 | 1.00 | 61.94 | 1DIK 701 |
| ATOM | 610 | C   | THR | 85 | -36.844 | 45.254 | 39.271 | 1.00 | 60.00 | 1DIK 702 |
| ATOM | 611 | O   | THR | 85 | -35.710 | 44.923 | 39.608 | 1.00 | 58.14 | 1DIK 703 |
| ATOM | 612 | CB  | THR | 85 | -37.714 | 46.973 | 40.844 | 1.00 | 64.54 | 1DIK 704 |
| ATOM | 613 | OG1 | THR | 85 | -36.901 | 46.916 | 42.027 | 1.00 | 68.74 | 1DIK 705 |
| ATOM | 614 | CG2 | THR | 85 | -39.062 | 47.627 | 41.167 | 1.00 | 64.69 | 1DIK 706 |
| ATOM | 615 | N   | PHE | 86 | -37.217 | 45.380 | 38.003 | 1.00 | 59.68 | 1DIK 707 |
| ATOM | 616 | CA  | PHE | 86 | -36.301 | 45.143 | 36.895 | 1.00 | 59.09 | 1DIK 708 |
| ATOM | 617 | C   | PHE | 86 | -36.308 | 46.366 | 35.988 | 1.00 | 58.32 | 1DIK 709 |
| ATOM | 618 | O   | PHE | 86 | -36.829 | 46.298 | 34.880 | 1.00 | 58.58 | 1DIK 710 |
| ATOM | 619 | CB  | PHE | 86 | -36.752 | 43.940 | 36.055 | 1.00 | 59.17 | 1DIK 711 |
| ATOM | 620 | CG  | PHE | 86 | -36.747 | 42.633 | 36.787 | 1.00 | 60.12 | 1DIK 712 |
| ATOM | 621 | CD1 | PHE | 86 | -35.566 | 41.917 | 36.952 | 1.00 | 60.09 | 1DIK 713 |
| ATOM | 622 | CD2 | PHE | 86 | -37.928 | 42.103 | 37.294 | 1.00 | 58.71 | 1DIK 714 |
| ATOM | 623 | CE1 | PHE | 86 | -35.564 | 40.685 | 37.614 | 1.00 | 62.46 | 1DIK 715 |
| ATOM | 624 | CE2 | PHE | 86 | -37.939 | 40.873 | 37.957 | 1.00 | 59.49 | 1DIK 716 |
| ATOM | 625 | CZ  | PHE | 86 | -36.756 | 40.162 | 38.117 | 1.00 | 59.88 | 1DIK 717 |
| ATOM | 626 | N   | ASP | 87 | -35.743 | 47.484 | 36.432 | 1.00 | 59.28 | 1DIK 718 |
| ATOM | 627 | CA  | ASP | 87 | -35.745 | 48.672 | 35.576 | 1.00 | 61.03 | 1DIK 719 |
| ATOM | 628 | C   | ASP | 87 | -34.390 | 49.050 | 34.977 | 1.00 | 58.67 | 1DIK 720 |
| ATOM | 629 | O   | ASP | 87 | -33.331 | 48.696 | 35.503 | 1.00 | 56.33 | 1DIK 721 |
| ATOM | 630 | CB  | ASP | 87 | -36.376 | 49.882 | 36.294 | 1.00 | 67.39 | 1DIK 722 |
| ATOM | 631 | CG  | ASP | 87 | -35.731 | 50.181 | 37.634 | 1.00 | 74.12 | 1DIK 723 |
| ATOM | 632 | OD1 | ASP | 87 | -34.542 | 50.581 | 37.654 | 1.00 | 77.08 | 1DIK 724 |
| ATOM | 633 | OD2 | ASP | 87 | -36.422 | 50.017 | 38.670 | 1.00 | 76.76 | 1DIK 725 |
| ATOM | 634 | N   | GLY | 88 | -34.438 | 49.775 | 33.864 | 1.00 | 56.11 | 1DIK 726 |
| ATOM | 635 | CA  | GLY | 88 | -33.223 | 50.193 | 33.195 | 1.00 | 52.64 | 1DIK 727 |
| ATOM | 636 | C   | GLY | 88 | -32.521 | 49.004 | 32.565 | 1.00 | 50.66 | 1DIK 728 |
| ATOM | 637 | O   | GLY | 88 | -33.161 | 48.140 | 31.950 | 1.00 | 48.22 | 1DIK 729 |
| ATOM | 638 | N   | LYS | 89 | -31.202 | 48.957 | 32.734 | 1.00 | 47.80 | 1DIK 730 |
| ATOM | 639 | CA  | LYS | 89 | -30.376 | 47.885 | 32.188 | 1.00 | 45.18 | 1DIK 731 |
| ATOM | 640 | C   | LYS | 89 | -30.681 | 46.482 | 32.744 | 1.00 | 44.09 | 1DIK 732 |
| ATOM | 641 | O   | LYS | 89 | -30.087 | 45.504 | 32.301 | 1.00 | 46.90 | 1DIK 733 |
| ATOM | 642 | CB  | LYS | 89 | -28.898 | 48.222 | 32.390 | 1.00 | 42.58 | 1DIK 734 |
| ATOM | 643 | CG  | LYS | 89 | -28.530 | 48.500 | 33.828 | 1.00 | 47.71 | 1DIK 735 |
| ATOM | 644 | CD  | LYS | 89 | -27.068 | 48.905 | 33.973 | 1.00 | 54.98 | 1DIK 736 |
| ATOM | 645 | CE  | LYS | 89 | -26.737 | 49.253 | 35.426 | 1.00 | 56.55 | 1DIK 737 |
| ATOM | 646 | NZ  | LYS | 89 | -25.293 | 49.611 | 35.610 | 1.00 | 61.03 | 1DIK 738 |
| ATOM | 647 | N   | TYR | 90 | -31.594 | 46.382 | 33.705 | 1.00 | 38.46 | 1DIK 739 |
| ATOM | 648 | CA  | TYR | 90 | -31.959 | 45.095 | 34.277 | 1.00 | 35.36 | 1DIK 740 |

FIG. 8-11

|      |     |     |     |    |         |        |        |      |       |          |
|------|-----|-----|-----|----|---------|--------|--------|------|-------|----------|
| ATOM | 649 | C   | TYR | 90 | -33.269 | 44.568 | 33.699 | 1.00 | 38.19 | 1DIK 741 |
| ATOM | 650 | O   | TYR | 90 | -33.709 | 43.469 | 34.042 | 1.00 | 36.65 | 1DIK 742 |
| ATOM | 651 | CB  | TYR | 90 | -32.122 | 45.220 | 35.781 | 1.00 | 32.46 | 1DIK 743 |
| ATOM | 652 | CG  | TYR | 90 | -30.873 | 45.633 | 36.506 | 1.00 | 31.81 | 1DIK 744 |
| ATOM | 653 | CD1 | TYR | 90 | -29.901 | 44.693 | 36.851 | 1.00 | 32.85 | 1DIK 745 |
| ATOM | 654 | CD2 | TYR | 90 | -30.668 | 46.959 | 36.866 | 1.00 | 32.53 | 1DIK 746 |
| ATOM | 655 | CE1 | TYR | 90 | -28.754 | 45.066 | 37.539 | 1.00 | 29.82 | 1DIK 747 |
| ATOM | 656 | CE2 | TYR | 90 | -29.528 | 47.351 | 37.553 | 1.00 | 32.39 | 1DIK 748 |
| ATOM | 657 | CZ  | TYR | 90 | -28.574 | 46.400 | 37.887 | 1.00 | 34.71 | 1DIK 749 |
| ATOM | 658 | OH  | TYR | 90 | -27.446 | 46.792 | 38.565 | 1.00 | 31.33 | 1DIK 750 |
| ATOM | 659 | N   | ALA | 91 | -33.891 | 45.351 | 32.820 | 1.00 | 41.63 | 1DIK 751 |
| ATOM | 660 | CA  | ALA | 91 | -35.168 | 44.978 | 32.218 | 1.00 | 40.63 | 1DIK 752 |
| ATOM | 661 | C   | ALA | 91 | -35.159 | 43.631 | 31.510 | 1.00 | 40.55 | 1DIK 753 |
| ATOM | 662 | O   | ALA | 91 | -36.105 | 42.858 | 31.641 | 1.00 | 41.26 | 1DIK 754 |
| ATOM | 663 | CB  | ALA | 91 | -35.632 | 46.069 | 31.262 | 1.00 | 40.02 | 1DIK 755 |
| ATOM | 664 | N   | PHE | 92 | -34.097 | 43.340 | 30.763 | 1.00 | 41.42 | 1DIK 756 |
| ATOM | 665 | CA  | PHE | 92 | -34.010 | 42.069 | 30.036 | 1.00 | 39.95 | 1DIK 757 |
| ATOM | 666 | C   | PHE | 92 | -34.164 | 40.849 | 30.938 | 1.00 | 38.42 | 1DIK 758 |
| ATOM | 667 | O   | PHE | 92 | -34.726 | 39.836 | 30.526 | 1.00 | 36.46 | 1DIK 759 |
| ATOM | 668 | CB  | PHE | 92 | -32.677 | 41.972 | 29.287 | 1.00 | 38.12 | 1DIK 760 |
| ATOM | 669 | CG  | PHE | 92 | -31.499 | 41.624 | 30.163 | 1.00 | 36.18 | 1DIK 761 |
| ATOM | 670 | CD1 | PHE | 92 | -30.861 | 42.606 | 30.919 | 1.00 | 32.76 | 1DIK 762 |
| ATOM | 671 | CD2 | PHE | 92 | -31.018 | 40.314 | 30.215 | 1.00 | 34.57 | 1DIK 763 |
| ATOM | 672 | CE1 | PHE | 92 | -29.760 | 42.297 | 31.713 | 1.00 | 34.09 | 1DIK 764 |
| ATOM | 673 | CE2 | PHE | 92 | -29.917 | 39.991 | 31.006 | 1.00 | 33.52 | 1DIK 765 |
| ATOM | 674 | CZ  | PHE | 92 | -29.284 | 40.988 | 31.759 | 1.00 | 34.32 | 1DIK 766 |
| ATOM | 675 | N   | LEU | 93 | -33.657 | 40.961 | 32.164 | 1.00 | 39.65 | 1DIK 767 |
| ATOM | 676 | CA  | LEU | 93 | -33.707 | 39.877 | 33.143 | 1.00 | 42.68 | 1DIK 768 |
| ATOM | 677 | C   | LEU | 93 | -35.097 | 39.376 | 33.504 | 1.00 | 46.01 | 1DIK 769 |
| ATOM | 678 | O   | LEU | 93 | -35.271 | 38.199 | 33.839 | 1.00 | 46.08 | 1DIK 770 |
| ATOM | 679 | CB  | LEU | 93 | -32.981 | 40.284 | 34.428 | 1.00 | 39.70 | 1DIK 771 |
| ATOM | 680 | CG  | LEU | 93 | -31.479 | 39.991 | 34.430 | 1.00 | 38.98 | 1DIK 772 |
| ATOM | 681 | CD1 | LEU | 93 | -30.805 | 40.641 | 35.632 | 1.00 | 37.62 | 1DIK 773 |
| ATOM | 682 | CD2 | LEU | 93 | -31.258 | 38.480 | 34.419 | 1.00 | 35.20 | 1DIK 774 |
| ATOM | 683 | N   | LYS | 94 | -36.085 | 40.257 | 33.437 | 1.00 | 50.11 | 1DIK 775 |
| ATOM | 684 | CA  | LYS | 94 | -37.445 | 39.874 | 33.780 | 1.00 | 54.55 | 1DIK 776 |
| ATOM | 685 | C   | LYS | 94 | -37.938 | 38.709 | 32.915 | 1.00 | 54.53 | 1DIK 777 |
| ATOM | 686 | O   | LYS | 94 | -38.651 | 37.831 | 33.402 | 1.00 | 56.72 | 1DIK 778 |
| ATOM | 687 | CB  | LYS | 94 | -38.380 | 41.087 | 33.663 | 1.00 | 59.55 | 1DIK 779 |
| ATOM | 688 | CG  | LYS | 94 | -39.736 | 40.899 | 34.322 | 1.00 | 66.52 | 1DIK 780 |
| ATOM | 689 | CD  | LYS | 94 | -40.436 | 42.236 | 34.556 | 1.00 | 71.87 | 1DIK 781 |
| ATOM | 690 | CE  | LYS | 94 | -41.818 | 42.031 | 35.189 | 1.00 | 75.09 | 1DIK 782 |
| ATOM | 691 | NZ  | LYS | 94 | -42.493 | 43.320 | 35.533 | 1.00 | 75.30 | 1DIK 783 |
| ATOM | 692 | N   | THR | 95 | -37.549 | 38.687 | 31.643 | 1.00 | 52.52 | 1DIK 784 |
| ATOM | 693 | CA  | THR | 95 | -37.991 | 37.622 | 30.748 | 1.00 | 50.56 | 1DIK 785 |
| ATOM | 694 | C   | THR | 95 | -36.902 | 36.850 | 30.009 | 1.00 | 49.46 | 1DIK 786 |
| ATOM | 695 | O   | THR | 95 | -37.177 | 36.258 | 28.960 | 1.00 | 48.63 | 1DIK 787 |
| ATOM | 696 | CB  | THR | 95 | -38.962 | 38.168 | 29.700 | 1.00 | 52.17 | 1DIK 788 |
| ATOM | 697 | OG1 | THR | 95 | -38.366 | 39.295 | 29.039 | 1.00 | 48.18 | 1DIK 789 |
| ATOM | 698 | CG2 | THR | 95 | -40.272 | 38.574 | 30.357 | 1.00 | 54.41 | 1DIK 790 |
| ATOM | 699 | N   | TYR | 96 | -35.676 | 36.855 | 30.531 | 1.00 | 47.27 | 1DIK 791 |
| ATOM | 700 | CA  | TYR | 96 | -34.582 | 36.119 | 29.894 | 1.00 | 44.27 | 1DIK 792 |
| ATOM | 701 | C   | TYR | 96 | -34.863 | 34.613 | 29.997 | 1.00 | 44.70 | 1DIK 793 |
| ATOM | 702 | O   | TYR | 96 | -35.227 | 34.107 | 31.060 | 1.00 | 43.58 | 1DIK 794 |
| ATOM | 703 | CB  | TYR | 96 | -33.236 | 36.456 | 30.550 | 1.00 | 37.81 | 1DIK 795 |
| ATOM | 704 | CG  | TYR | 96 | -32.071 | 35.699 | 29.957 | 1.00 | 34.72 | 1DIK 796 |
| ATOM | 705 | CD1 | TYR | 96 | -31.362 | 36.208 | 28.866 | 1.00 | 38.16 | 1DIK 797 |
| ATOM | 706 | CD2 | TYR | 96 | -31.683 | 34.465 | 30.474 | 1.00 | 35.36 | 1DIK 798 |
| ATOM | 707 | CE1 | TYR | 96 | -30.290 | 35.499 | 28.302 | 1.00 | 37.21 | 1DIK 799 |
| ATOM | 708 | CE2 | TYR | 96 | -30.620 | 33.747 | 29.923 | 1.00 | 37.79 | 1DIK 800 |
| ATOM | 709 | CZ  | TYR | 96 | -29.929 | 34.269 | 28.839 | 1.00 | 39.34 | 1DIK 801 |
| ATOM | 710 | OH  | TYR | 96 | -28.882 | 33.557 | 28.303 | 1.00 | 37.35 | 1DIK 802 |
| ATOM | 711 | N   | ASN | 97 | -34.694 | 33.903 | 28.888 | 1.00 | 43.16 | 1DIK 803 |
| ATOM | 712 | CA  | ASN | 97 | -34.937 | 32.471 | 28.859 | 1.00 | 45.14 | 1DIK 804 |
| ATOM | 713 | C   | ASN | 97 | -33.617 | 31.744 | 28.554 | 1.00 | 45.53 | 1DIK 805 |
| ATOM | 714 | O   | ASN | 97 | -33.097 | 31.838 | 27.436 | 1.00 | 46.50 | 1DIK 806 |

In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |     |     |     |     |         |        |        |      |       |          |
|------|-----|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 715 | CB  | ASN | 97  | -35.988 | 32.167 | 27.788 | 1.00 | 50.43 | 1DIK 807 |
| ATOM | 716 | CG  | ASN | 97  | -36.536 | 30.758 | 27.895 | 1.00 | 58.07 | 1DIK 808 |
| ATOM | 717 | OD1 | ASN | 97  | -36.630 | 30.191 | 28.991 | 1.00 | 62.08 | 1DIK 809 |
| ATOM | 718 | ND2 | ASN | 97  | -36.905 | 30.179 | 26.755 | 1.00 | 59.47 | 1DIK 810 |
| ATOM | 719 | N   | TYR | 98  | -33.079 | 31.035 | 29.550 | 1.00 | 42.20 | 1DIK 811 |
| ATOM | 720 | CA  | TYR | 98  | -31.814 | 30.308 | 29.413 | 1.00 | 39.67 | 1DIK 812 |
| ATOM | 721 | C   | TYR | 98  | -31.937 | 29.149 | 28.430 | 1.00 | 39.43 | 1DIK 813 |
| ATOM | 722 | O   | TYR | 98  | -32.589 | 28.156 | 28.719 | 1.00 | 42.93 | 1DIK 814 |
| ATOM | 723 | CB  | TYR | 98  | -31.357 | 29.772 | 30.775 | 1.00 | 35.56 | 1DIK 815 |
| ATOM | 724 | CG  | TYR | 98  | -29.955 | 29.201 | 30.763 | 1.00 | 34.67 | 1DIK 816 |
| ATOM | 725 | CD1 | TYR | 98  | -29.720 | 27.862 | 30.440 | 1.00 | 33.36 | 1DIK 817 |
| ATOM | 726 | CD2 | TYR | 98  | -28.857 | 30.004 | 31.067 | 1.00 | 30.84 | 1DIK 818 |
| ATOM | 727 | CE1 | TYR | 98  | -28.421 | 27.343 | 30.421 | 1.00 | 33.02 | 1DIK 819 |
| ATOM | 728 | CE2 | TYR | 98  | -27.564 | 29.496 | 31.053 | 1.00 | 31.68 | 1DIK 820 |
| ATOM | 729 | CZ  | TYR | 98  | -27.351 | 28.167 | 30.731 | 1.00 | 32.17 | 1DIK 821 |
| ATOM | 730 | OH  | TYR | 98  | -26.071 | 27.673 | 30.742 | 1.00 | 31.22 | 1DIK 822 |
| ATOM | 731 | N   | SER | 99  | -31.304 | 29.267 | 27.272 | 1.00 | 41.23 | 1DIK 823 |
| ATOM | 732 | CA  | SER | 99  | -31.395 | 28.211 | 26.277 | 1.00 | 42.13 | 1DIK 824 |
| ATOM | 733 | C   | SER | 99  | -30.043 | 27.782 | 25.699 | 1.00 | 41.05 | 1DIK 825 |
| ATOM | 734 | O   | SER | 99  | -29.972 | 27.293 | 24.572 | 1.00 | 39.39 | 1DIK 826 |
| ATOM | 735 | CB  | SER | 99  | -32.340 | 28.645 | 25.148 | 1.00 | 43.93 | 1DIK 827 |
| ATOM | 736 | OG  | SER | 99  | -31.869 | 29.828 | 24.518 | 1.00 | 44.91 | 1DIK 828 |
| ATOM | 737 | N   | LEU | 100 | -28.970 | 27.964 | 26.464 | 1.00 | 38.89 | 1DIK 829 |
| ATOM | 738 | CA  | LEU | 100 | -27.647 | 27.561 | 25.999 | 1.00 | 36.71 | 1DIK 830 |
| ATOM | 739 | C   | LEU | 100 | -27.555 | 26.038 | 26.067 | 1.00 | 35.82 | 1DIK 831 |
| ATOM | 740 | O   | LEU | 100 | -28.181 | 25.425 | 26.932 | 1.00 | 37.24 | 1DIK 832 |
| ATOM | 741 | CB  | LEU | 100 | -26.548 | 28.175 | 26.878 | 1.00 | 33.03 | 1DIK 833 |
| ATOM | 742 | CG  | LEU | 100 | -26.381 | 29.694 | 26.799 | 1.00 | 33.85 | 1DIK 834 |
| ATOM | 743 | CD1 | LEU | 100 | -25.272 | 30.149 | 27.725 | 1.00 | 30.27 | 1DIK 835 |
| ATOM | 744 | CD2 | LEU | 100 | -26.063 | 30.090 | 25.375 | 1.00 | 33.01 | 1DIK 836 |
| ATOM | 745 | N   | GLY | 101 | -26.789 | 25.437 | 25.153 | 1.00 | 34.71 | 1DIK 837 |
| ATOM | 746 | CA  | GLY | 101 | -26.585 | 23.999 | 25.169 | 1.00 | 29.13 | 1DIK 838 |
| ATOM | 747 | C   | GLY | 101 | -25.572 | 23.673 | 26.270 | 1.00 | 31.41 | 1DIK 839 |
| ATOM | 748 | O   | GLY | 101 | -25.410 | 24.443 | 27.227 | 1.00 | 28.98 | 1DIK 840 |
| ATOM | 749 | N   | ALA | 102 | -24.875 | 22.547 | 26.163 | 1.00 | 30.11 | 1DIK 841 |
| ATOM | 750 | CA  | ALA | 102 | -23.892 | 22.208 | 27.180 | 1.00 | 29.75 | 1DIK 842 |
| ATOM | 751 | C   | ALA | 102 | -22.745 | 21.409 | 26.581 | 1.00 | 29.60 | 1DIK 843 |
| ATOM | 752 | O   | ALA | 102 | -22.943 | 20.675 | 25.622 | 1.00 | 32.26 | 1DIK 844 |
| ATOM | 753 | CB  | ALA | 102 | -24.556 | 21.423 | 28.318 | 1.00 | 26.45 | 1DIK 845 |
| ATOM | 754 | N   | ASP | 103 | -21.553 | 21.578 | 27.148 | 1.00 | 29.83 | 1DIK 846 |
| ATOM | 755 | CA  | ASP | 103 | -20.329 | 20.868 | 26.756 | 1.00 | 31.04 | 1DIK 847 |
| ATOM | 756 | C   | ASP | 103 | -19.817 | 20.909 | 25.318 | 1.00 | 29.41 | 1DIK 848 |
| ATOM | 757 | O   | ASP | 103 | -18.603 | 20.919 | 25.093 | 1.00 | 26.94 | 1DIK 849 |
| ATOM | 758 | CB  | ASP | 103 | -20.425 | 19.391 | 27.175 | 1.00 | 32.82 | 1DIK 850 |
| ATOM | 759 | CG  | ASP | 103 | -20.685 | 19.213 | 28.665 | 1.00 | 37.87 | 1DIK 851 |
| ATOM | 760 | OD1 | ASP | 103 | -19.906 | 19.738 | 29.490 | 1.00 | 39.37 | 1DIK 852 |
| ATOM | 761 | OD2 | ASP | 103 | -21.677 | 18.540 | 29.013 | 1.00 | 39.81 | 1DIK 853 |
| ATOM | 762 | N   | ASP | 104 | -20.723 | 20.924 | 24.351 | 1.00 | 28.43 | 1DIK 854 |
| ATOM | 763 | CA  | ASP | 104 | -20.356 | 20.891 | 22.954 | 1.00 | 29.73 | 1DIK 855 |
| ATOM | 764 | C   | ASP | 104 | -19.720 | 22.127 | 22.382 | 1.00 | 30.60 | 1DIK 856 |
| ATOM | 765 | O   | ASP | 104 | -19.830 | 23.226 | 22.925 | 1.00 | 32.58 | 1DIK 857 |
| ATOM | 766 | CB  | ASP | 104 | -21.581 | 20.573 | 22.096 | 1.00 | 37.28 | 1DIK 858 |
| ATOM | 767 | CG  | ASP | 104 | -22.117 | 19.176 | 22.321 | 1.00 | 43.64 | 1DIK 859 |
| ATOM | 768 | OD1 | ASP | 104 | -21.308 | 18.243 | 22.545 | 1.00 | 45.93 | 1DIK 860 |
| ATOM | 769 | OD2 | ASP | 104 | -23.358 | 19.019 | 22.268 | 1.00 | 49.65 | 1DIK 861 |
| ATOM | 770 | N   | LEU | 105 | -19.053 | 21.915 | 21.257 | 1.00 | 27.70 | 1DIK 862 |
| ATOM | 771 | CA  | LEU | 105 | -18.432 | 22.973 | 20.491 | 1.00 | 27.87 | 1DIK 863 |
| ATOM | 772 | C   | LEU | 105 | -19.642 | 23.744 | 19.933 | 1.00 | 29.06 | 1DIK 864 |
| ATOM | 773 | O   | LEU | 105 | -20.626 | 23.116 | 19.531 | 1.00 | 27.73 | 1DIK 865 |
| ATOM | 774 | CB  | LEU | 105 | -17.668 | 22.327 | 19.334 | 1.00 | 27.40 | 1DIK 866 |
| ATOM | 775 | CG  | LEU | 105 | -16.474 | 23.040 | 18.736 | 1.00 | 27.83 | 1DIK 867 |
| ATOM | 776 | CD1 | LEU | 105 | -15.518 | 23.368 | 19.855 | 1.00 | 33.80 | 1DIK 868 |
| ATOM | 777 | CD2 | LEU | 105 | -15.790 | 22.162 | 17.716 | 1.00 | 27.39 | 1DIK 869 |
| ATOM | 778 | N   | THR | 106 | -19.599 | 25.075 | 19.917 | 1.00 | 28.75 | 1DIK 870 |
| ATOM | 779 | CA  | THR | 106 | -20.714 | 25.848 | 19.358 | 1.00 | 28.71 | 1DIK 871 |
| ATOM | 780 | C   | THR | 106 | -20.462 | 26.060 | 17.858 | 1.00 | 31.52 | 1DIK 872 |

FIG. 8-13

|      |     |     |     |     |         |        |        |      |       |          |
|------|-----|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 781 | O   | THR | 106 | -19.338 | 25.863 | 17.369 | 1.00 | 32.15 | 1DIK 873 |
| ATOM | 782 | CB  | THR | 106 | -20.849 | 27.256 | 20.001 | 1.00 | 29.41 | 1DIK 874 |
| ATOM | 783 | OG1 | THR | 106 | -19.691 | 28.044 | 19.698 | 1.00 | 28.94 | 1DIK 875 |
| ATOM | 784 | CG2 | THR | 106 | -21.034 | 27.164 | 21.496 | 1.00 | 27.82 | 1DIK 876 |
| ATOM | 785 | N   | PRO | 107 | -21.503 | 26.448 | 17.098 | 1.00 | 30.71 | 1DIK 877 |
| ATOM | 786 | CA  | PRO | 107 | -21.312 | 26.680 | 15.658 | 1.00 | 28.88 | 1DIK 878 |
| ATOM | 787 | C   | PRO | 107 | -20.169 | 27.693 | 15.406 | 1.00 | 27.50 | 1DIK 879 |
| ATOM | 788 | O   | PRO | 107 | -19.381 | 27.531 | 14.464 | 1.00 | 30.80 | 1DIK 880 |
| ATOM | 789 | CB  | PRO | 107 | -22.679 | 27.203 | 15.218 | 1.00 | 25.78 | 1DIK 881 |
| ATOM | 790 | CG  | PRO | 107 | -23.610 | 26.495 | 16.163 | 1.00 | 27.66 | 1DIK 882 |
| ATOM | 791 | CD  | PRO | 107 | -22.910 | 26.662 | 17.481 | 1.00 | 28.45 | 1DIK 883 |
| ATOM | 792 | N   | PHE | 108 | -20.082 | 28.727 | 16.245 | 1.00 | 23.11 | 1DIK 884 |
| ATOM | 793 | CA  | PHE | 108 | -19.015 | 29.729 | 16.151 | 1.00 | 22.62 | 1DIK 885 |
| ATOM | 794 | C   | PHE | 108 | -17.644 | 29.059 | 16.383 | 1.00 | 25.28 | 1DIK 886 |
| ATOM | 795 | O   | PHE | 108 | -16.657 | 29.356 | 15.670 | 1.00 | 25.00 | 1DIK 887 |
| ATOM | 796 | CB  | PHE | 108 | -19.226 | 30.837 | 17.195 | 1.00 | 20.26 | 1DIK 888 |
| ATOM | 797 | CG  | PHE | 108 | -18.063 | 31.794 | 17.312 | 1.00 | 25.13 | 1DIK 889 |
| ATOM | 798 | CD1 | PHE | 108 | -17.819 | 32.743 | 16.325 | 1.00 | 24.81 | 1DIK 890 |
| ATOM | 799 | CD2 | PHE | 108 | -17.196 | 31.737 | 18.410 | 1.00 | 28.22 | 1DIK 891 |
| ATOM | 800 | CE1 | PHE | 108 | -16.726 | 33.617 | 16.430 | 1.00 | 26.50 | 1DIK 892 |
| ATOM | 801 | CE2 | PHE | 108 | -16.101 | 32.609 | 18.521 | 1.00 | 25.64 | 1DIK 893 |
| ATOM | 802 | CZ  | PHE | 108 | -15.868 | 33.546 | 17.531 | 1.00 | 22.77 | 1DIK 894 |
| ATOM | 803 | N   | GLY | 109 | -17.597 | 28.164 | 17.380 | 1.00 | 21.53 | 1DIK 895 |
| ATOM | 804 | CA  | GLY | 109 | -16.383 | 27.428 | 17.704 | 1.00 | 21.31 | 1DIK 896 |
| ATOM | 805 | C   | GLY | 109 | -15.917 | 26.535 | 16.562 | 1.00 | 22.06 | 1DIK 897 |
| ATOM | 806 | O   | GLY | 109 | -14.713 | 26.384 | 16.338 | 1.00 | 22.23 | 1DIK 898 |
| ATOM | 807 | N   | GLU | 110 | -16.869 | 25.941 | 15.842 | 1.00 | 20.87 | 1DIK 899 |
| ATOM | 808 | CA  | GLU | 110 | -16.565 | 25.108 | 14.687 | 1.00 | 18.70 | 1DIK 900 |
| ATOM | 809 | C   | GLU | 110 | -15.908 | 25.975 | 13.623 | 1.00 | 19.56 | 1DIK 901 |
| ATOM | 810 | O   | GLU | 110 | -14.895 | 25.590 | 13.019 | 1.00 | 20.43 | 1DIK 902 |
| ATOM | 811 | CB  | GLU | 110 | -17.843 | 24.513 | 14.123 | 1.00 | 19.80 | 1DIK 903 |
| ATOM | 812 | CG  | GLU | 110 | -18.563 | 23.605 | 15.104 | 1.00 | 22.70 | 1DIK 904 |
| ATOM | 813 | CD  | GLU | 110 | -19.803 | 22.983 | 14.520 | 1.00 | 23.25 | 1DIK 905 |
| ATOM | 814 | OE1 | GLU | 110 | -20.346 | 23.513 | 13.524 | 1.00 | 27.96 | 1DIK 906 |
| ATOM | 815 | OE2 | GLU | 110 | -20.237 | 21.955 | 15.063 | 1.00 | 26.17 | 1DIK 907 |
| ATOM | 816 | N   | GLN | 111 | -16.489 | 27.153 | 13.402 | 1.00 | 18.95 | 1DIK 908 |
| ATOM | 817 | CA  | GLN | 111 | -15.963 | 28.094 | 12.427 | 1.00 | 20.74 | 1DIK 909 |
| ATOM | 818 | C   | GLN | 111 | -14.541 | 28.523 | 12.791 | 1.00 | 21.64 | 1DIK 910 |
| ATOM | 819 | O   | GLN | 111 | -13.679 | 28.651 | 11.908 | 1.00 | 21.26 | 1DIK 911 |
| ATOM | 820 | CB  | GLN | 111 | -16.868 | 29.321 | 12.319 | 1.00 | 26.01 | 1DIK 912 |
| ATOM | 821 | CG  | GLN | 111 | -16.527 | 30.222 | 11.144 | 1.00 | 32.20 | 1DIK 913 |
| ATOM | 822 | CD  | GLN | 111 | -16.503 | 29.455 | 9.825  | 1.00 | 37.67 | 1DIK 914 |
| ATOM | 823 | OE1 | GLN | 111 | -17.440 | 28.718 | 9.511  | 1.00 | 42.78 | 1DIK 915 |
| ATOM | 824 | NE2 | GLN | 111 | -15.432 | 29.620 | 9.051  | 1.00 | 34.61 | 1DIK 916 |
| ATOM | 825 | N   | GLU | 112 | -14.292 | 28.743 | 14.084 | 1.00 | 20.80 | 1DIK 917 |
| ATOM | 826 | CA  | GLU | 112 | -12.960 | 29.137 | 14.550 | 1.00 | 19.26 | 1DIK 918 |
| ATOM | 827 | C   | GLU | 112 | -11.875 | 28.135 | 14.133 | 1.00 | 19.50 | 1DIK 919 |
| ATOM | 828 | O   | GLU | 112 | -10.777 | 28.537 | 13.705 | 1.00 | 14.92 | 1DIK 920 |
| ATOM | 829 | CB  | GLU | 112 | -12.923 | 29.262 | 16.075 | 1.00 | 19.60 | 1DIK 921 |
| ATOM | 830 | CG  | GLU | 112 | -13.535 | 30.522 | 16.669 | 1.00 | 19.22 | 1DIK 922 |
| ATOM | 831 | CD  | GLU | 112 | -13.276 | 30.607 | 18.157 | 1.00 | 19.02 | 1DIK 923 |
| ATOM | 832 | OE1 | GLU | 112 | -13.712 | 29.691 | 18.878 | 1.00 | 19.03 | 1DIK 924 |
| ATOM | 833 | OE2 | GLU | 112 | -12.636 | 31.576 | 18.611 | 1.00 | 19.54 | 1DIK 925 |
| ATOM | 834 | N   | LEU | 113 | -12.177 | 26.841 | 14.262 | 1.00 | 15.87 | 1DIK 926 |
| ATOM | 835 | CA  | LEU | 113 | -11.213 | 25.803 | 13.908 | 1.00 | 18.95 | 1DIK 927 |
| ATOM | 836 | C   | LEU | 113 | -11.023 | 25.666 | 12.398 | 1.00 | 19.66 | 1DIK 928 |
| ATOM | 837 | O   | LEU | 113 | -9.907  | 25.411 | 11.929 | 1.00 | 19.09 | 1DIK 929 |
| ATOM | 838 | CB  | LEU | 113 | -11.592 | 24.471 | 14.559 | 1.00 | 19.94 | 1DIK 930 |
| ATOM | 839 | CG  | LEU | 113 | -11.016 | 24.283 | 15.966 | 1.00 | 19.61 | 1DIK 931 |
| ATOM | 840 | CD1 | LEU | 113 | -9.550  | 23.910 | 15.842 | 1.00 | 17.82 | 1DIK 932 |
| ATOM | 841 | CD2 | LEU | 113 | -11.190 | 25.552 | 16.819 | 1.00 | 15.58 | 1DIK 933 |
| ATOM | 842 | N   | VAL | 114 | -12.104 | 25.840 | 11.641 | 1.00 | 20.06 | 1DIK 934 |
| ATOM | 843 | CA  | VAL | 114 | -12.020 | 25.801 | 10.183 | 1.00 | 18.34 | 1DIK 935 |
| ATOM | 844 | C   | VAL | 114 | -11.039 | 26.916 | 9.779  | 1.00 | 19.73 | 1DIK 936 |
| ATOM | 845 | O   | VAL | 114 | -10.108 | 26.692 | 9.003  | 1.00 | 20.73 | 1DIK 937 |
| ATOM | 846 | CB  | VAL | 114 | -13.411 | 26.071 | 9.526  | 1.00 | 21.09 | 1DIK 938 |

FIG. 8-14

|      |     |     |     |     |         |        |        |      |       |          |     |
|------|-----|-----|-----|-----|---------|--------|--------|------|-------|----------|-----|
| ATOM | 847 | CG1 | VAL | 114 | -13.246 | 26.333 | 8.048  | 1.00 | 11.01 | 1DIK     | 939 |
| ATOM | 848 | CG2 | VAL | 114 | -14.361 | 24.877 | 9.747  | 1.00 | 14.20 | 1DIK     | 940 |
| ATOM | 849 | N   | ASN | 115 | -11.245 | 28.115 | 10.322 | 1.00 | 19.62 | 1DIK     | 941 |
| ATOM | 850 | CA  | ASN | 115 | -10.371 | 29.255 | 10.031 | 1.00 | 19.27 | 1DIK     | 942 |
| ATOM | 851 | C   | ASN | 115 | -8.909  | 28.985 | 10.398 | 1.00 | 20.48 | 1DIK     | 943 |
| ATOM | 852 | O   | ASN | 115 | -7.993  | 29.371 | 9.673  | 1.00 | 19.85 | 1DIK     | 944 |
| ATOM | 853 | CB  | ASN | 115 | -10.844 | 30.494 | 10.776 | 1.00 | 19.96 | 1DIK     | 945 |
| ATOM | 854 | CG  | ASN | 115 | -12.094 | 31.109 | 10.175 | 1.00 | 21.18 | 1DIK     | 946 |
| ATOM | 855 | OD1 | ASN | 115 | -12.671 | 30.593 | 9.226  | 1.00 | 22.64 | 1DIK     | 947 |
| ATOM | 856 | ND2 | ASN | 115 | -12.516 | 32.227 | 10.733 | 1.00 | 19.58 | 1DIK     | 948 |
| ATOM | 857 | N   | SER | 116 | -8.699  | 28.327 | 11.532 | 1.00 | 22.03 | 1DIK     | 949 |
| ATOM | 858 | CA  | SER | 116 | -7.358  | 27.966 | 12.004 | 1.00 | 20.45 | 1DIK     | 950 |
| ATOM | 859 | C   | SER | 116 | -6.696  | 26.987 | 11.000 | 1.00 | 20.54 | 1DIK     | 951 |
| ATOM | 860 | O   | SER | 116 | -5.489  | 27.078 | 10.725 | 1.00 | 19.21 | 1DIK     | 952 |
| ATOM | 861 | CB  | SER | 116 | -7.465  | 27.330 | 13.407 | 1.00 | 20.16 | 1DIK     | 953 |
| ATOM | 862 | OG  | SER | 116 | -6.199  | 27.086 | 13.987 | 1.00 | 15.09 | 1DIK     | 954 |
| ATOM | 863 | N   | GLY | 117 | -7.484  | 26.059 | 10.458 | 1.00 | 17.37 | 1DIK     | 955 |
| ATOM | 864 | CA  | GLY | 117 | -6.963  | 25.112 | 9.485  | 1.00 | 18.31 | 1DIK     | 956 |
| ATOM | 865 | C   | GLY | 117 | -6.507  | 25.807 | 8.209  | 1.00 | 19.33 | 1DIK     | 957 |
| ATOM | 866 | O   | GLY | 117 | -5.468  | 25.455 | 7.647  | 1.00 | 22.20 | 1DIK     | 958 |
| ATOM | 867 | N   | ILE | 118 | -7.294  | 26.784 | 7.759  | 1.00 | 18.87 | 1DIK     | 959 |
| ATOM | 868 | CA  | ILE | 118 | -6.998  | 27.585 | 6.567  | 1.00 | 19.05 | 1DIK     | 960 |
| ATOM | 869 | C   | ILE | 118 | -5.690  | 28.347 | 6.739  | 1.00 | 19.38 | 1DIK     | 961 |
| ATOM | 870 | O   | ILE | 118 | -4.831  | 28.365 | 5.848  | 1.00 | 20.03 | 1DIK     | 962 |
| ATOM | 871 | CB  | ILE | 118 | -8.105  | 28.640 | 6.316  | 1.00 | 18.22 | 1DIK     | 963 |
| ATOM | 872 | CG1 | ILE | 118 | -9.392  | 27.959 | 5.860  | 1.00 | 16.45 | 1DIK     | 964 |
| ATOM | 873 | CG2 | ILE | 118 | -7.627  | 29.688 | 5.310  | 1.00 | 13.65 | 1DIK     | 965 |
| ATOM | 874 | CD1 | ILE | 118 | -10.549 | 28.901 | 5.792  | 1.00 | 12.46 | 1DIK     | 966 |
| ATOM | 875 | N   | LYS | 119 | -5.555  | 28.979 | 7.900  | 1.00 | 21.72 | 1DIK     | 967 |
| ATOM | 876 | CA  | LYS | 119 | -4.381  | 29.775 | 8.225  | 1.00 | 21.99 | 1DIK     | 968 |
| ATOM | 877 | C   | LYS | 119 | -3.095  | 28.955 | 8.340  | 1.00 | 22.12 | 1DIK     | 969 |
| ATOM | 878 | O   | LYS | 119 | -2.034  | 29.404 | 7.881  | 1.00 | 22.21 | 1DIK     | 970 |
| ATOM | 879 | CB  | LYS | 119 | -4.636  | 30.574 | 9.503  | 1.00 | 22.43 | 1DIK     | 971 |
| ATOM | 880 | CG  | LYS | 119 | -3.536  | 31.557 | 9.789  | 1.00 | 27.62 | 1DIK     | 972 |
| ATOM | 881 | CD  | LYS | 119 | -4.020  | 32.690 | 10.649 | 1.00 | 29.86 | 1DIK     | 973 |
| ATOM | 882 | CE  | LYS | 119 | -2.986  | 33.798 | 10.646 | 1.00 | 29.14 | 1DIK     | 974 |
| ATOM | 883 | NZ  | LYS | 119 | -3.311  | 34.827 | 11.667 | 1.00 | 30.24 | 1DIK     | 975 |
| ATOM | 884 | N   | PHE | 120 | -3.191  | 27.765 | 8.942  | 1.00 | 19.44 | 1DIK     | 976 |
| ATOM | 885 | CA  | PHE | 120 | -2.034  | 26.879 | 9.084  | 1.00 | 20.52 | 1DIK     | 977 |
| ATOM | 886 | C   | PHE | 120 | -1.561  | 26.429 | 7.694  | 1.00 | 22.99 | 1DIK     | 978 |
| ATOM | 887 | O   | PHE | 120 | -0.355  | 26.404 | 7.415  | 1.00 | 21.56 | 1DIK     | 979 |
| ATOM | 888 | CB  | PHE | 120 | -2.381  | 25.647 | 9.927  | 1.00 | 18.62 | 1DIK     | 980 |
| ATOM | 889 | CG  | PHE | 120 | -1.208  | 24.727 | 10.163 | 1.00 | 25.65 | 1DIK     | 981 |
| ATOM | 890 | CD1 | PHE | 120 | -0.192  | 25.083 | 11.059 | 1.00 | 23.32 | 1DIK     | 982 |
| ATOM | 891 | CD2 | PHE | 120 | -1.114  | 23.504 | 9.493  | 1.00 | 25.43 | 1DIK     | 983 |
| ATOM | 892 | CE1 | PHE | 120 | 0.894   | 24.243 | 11.284 | 1.00 | 18.73 | 1DIK     | 984 |
| ATOM | 893 | CE2 | PHE | 120 | -0.025  | 22.651 | 9.712  | 1.00 | 22.55 | 1DIK     | 985 |
| ATOM | 894 | CZ  | PHE | 120 | 0.981   | 23.021 | 10.610 | 1.00 | 20.53 | 1DIK     | 986 |
| ATOM | 895 | N   | TYR | 121 | -2.515  | 26.074 | 6.830  | 1.00 | 20.17 | 1DIK     | 987 |
| ATOM | 896 | CA  | TYR | 121 | -2.179  | 25.656 | 5.482  | 1.00 | 19.95 | 1DIK     | 988 |
| ATOM | 897 | C   | TYR | 121 | -1.450  | 26.766 | 4.718  | 1.00 | 21.59 | 1DIK     | 989 |
| ATOM | 898 | O   | TYR | 121 | -0.402  | 26.528 | 4.112  | 1.00 | 19.41 | 1DIK     | 990 |
| ATOM | 899 | CB  | TYR | 121 | -3.427  | 25.271 | 4.668  | 1.00 | 19.72 | 1DIK     | 991 |
| ATOM | 900 | CG  | TYR | 121 | -3.029  | 24.865 | 3.265  | 1.00 | 20.01 | 1DIK     | 992 |
| ATOM | 901 | CD1 | TYR | 121 | -2.859  | 25.819 | 2.240  | 1.00 | 18.79 | 1DIK     | 993 |
| ATOM | 902 | CD2 | TYR | 121 | -2.721  | 23.537 | 2.983  | 1.00 | 20.66 | 1DIK     | 994 |
| ATOM | 903 | CE1 | TYR | 121 | -2.381  | 25.445 | 0.976  | 1.00 | 19.33 | 1DIK     | 995 |
| ATOM | 904 | CE2 | TYR | 121 | -2.246  | 23.152 | 1.730  | 1.00 | 23.50 | 1DIK     | 996 |
| ATOM | 905 | CZ  | TYR | 121 | -2.074  | 24.097 | 0.737  | 1.00 | 23.64 | 1DIK     | 997 |
| ATOM | 906 | OH  | TYR | 121 | -1.593  | 23.670 | -0.472 | 1.00 | 22.79 | 1DIK     | 998 |
| ATOM | 907 | N   | GLN | 122 | -2.021  | 27.969 | 4.734  | 1.00 | 23.17 | 1DIK     | 999 |
| ATOM | 908 | CA  | GLN | 122 | -1.447  | 29.104 | 4.022  | 1.00 | 22.67 | 1DIK1000 |     |
| ATOM | 909 | C   | GLN | 122 | -0.085  | 29.549 | 4.527  | 1.00 | 22.41 | 1DIK1001 |     |
| ATOM | 910 | O   | GLN | 122 | 0.799   | 29.860 | 3.735  | 1.00 | 25.99 | 1DIK1002 |     |
| ATOM | 911 | CB  | GLN | 122 | -2.387  | 30.296 | 4.071  | 1.00 | 26.42 | 1DIK1103 |     |
| ATOM | 912 | CG  | GLN | 122 | -3.691  | 30.133 | 3.323  | 1.00 | 27.92 | 1DIK1004 |     |

|      |     |     |     |     |        |        |        |      |       |          |
|------|-----|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 913 | CD  | GLN | 122 | -4.623 | 31.333 | 3.531  | 1.00 | 34.41 | 1DIK1005 |
| ATOM | 914 | OE1 | GLN | 122 | -4.531 | 32.066 | 4.537  | 1.00 | 33.16 | 1DIK1006 |
| ATOM | 915 | NE2 | GLN | 122 | -5.528 | 31.538 | 2.582  | 1.00 | 36.14 | 1DIK1007 |
| ATOM | 916 | N   | ARG | 123 | 0.089  | 29.586 | 5.841  | 1.00 | 22.55 | 1DIK1008 |
| ATOM | 917 | CA  | ARG | 123 | 1.359  | 30.011 | 6.416  | 1.00 | 21.19 | 1DIK1009 |
| ATOM | 918 | C   | ARG | 123 | 2.541  | 29.106 | 6.012  | 1.00 | 23.05 | 1DIK1010 |
| ATOM | 919 | O   | ARG | 123 | 3.652  | 29.582 | 5.785  | 1.00 | 23.96 | 1DIK1011 |
| ATOM | 920 | CB  | ARG | 123 | 1.225  | 30.083 | 7.947  | 1.00 | 20.65 | 1DIK1012 |
| ATOM | 921 | CG  | ARG | 123 | 2.485  | 30.519 | 8.653  | 1.00 | 19.56 | 1DIK1013 |
| ATOM | 922 | CD  | ARG | 123 | 2.297  | 30.672 | 10.146 | 1.00 | 21.87 | 1DIK1014 |
| ATOM | 923 | NE  | ARG | 123 | 3.580  | 30.973 | 10.789 | 1.00 | 24.63 | 1DIK1015 |
| ATOM | 924 | CZ  | ARG | 123 | 4.173  | 32.174 | 10.802 | 1.00 | 28.06 | 1DIK1016 |
| ATOM | 925 | NH1 | ARG | 123 | 3.605  | 33.236 | 10.232 | 1.00 | 18.64 | 1DIK1017 |
| ATOM | 926 | NH2 | ARG | 123 | 5.349  | 32.319 | 11.402 | 1.00 | 24.13 | 1DIK1018 |
| ATOM | 927 | N   | TYR | 124 | 2.298  | 27.803 | 5.915  | 1.00 | 24.21 | 1DIK1019 |
| ATOM | 928 | CA  | TYR | 124 | 3.346  | 26.852 | 5.572  | 1.00 | 24.48 | 1DIK1020 |
| ATOM | 929 | C   | TYR | 124 | 3.125  | 26.182 | 4.222  | 1.00 | 26.16 | 1DIK1021 |
| ATOM | 930 | O   | TYR | 124 | 3.486  | 25.016 | 4.049  | 1.00 | 24.40 | 1DIK1022 |
| ATOM | 931 | CB  | TYR | 124 | 3.444  | 25.790 | 6.679  | 1.00 | 22.35 | 1DIK1023 |
| ATOM | 932 | CG  | TYR | 124 | 3.696  | 26.398 | 8.040  | 1.00 | 24.40 | 1DIK1024 |
| ATOM | 933 | CD1 | TYR | 124 | 4.946  | 26.923 | 8.360  | 1.00 | 20.62 | 1DIK1025 |
| ATOM | 934 | CD2 | TYR | 124 | 2.677  | 26.484 | 8.998  | 1.00 | 25.42 | 1DIK1026 |
| ATOM | 935 | CE1 | TYR | 124 | 5.186  | 27.515 | 9.579  | 1.00 | 20.04 | 1DIK1027 |
| ATOM | 936 | CE2 | TYR | 124 | 2.907  | 27.082 | 10.236 | 1.00 | 22.59 | 1DIK1028 |
| ATOM | 937 | CZ  | TYR | 124 | 4.176  | 27.600 | 10.521 | 1.00 | 22.79 | 1DIK1029 |
| ATOM | 938 | OH  | TYR | 124 | 4.450  | 28.205 | 11.737 | 1.00 | 16.28 | 1DIK1030 |
| ATOM | 939 | N   | GLU | 125 | 2.548  | 26.921 | 3.273  | 1.00 | 27.83 | 1DIK1031 |
| ATOM | 940 | CA  | GLU | 125 | 2.242  | 26.406 | 1.931  | 1.00 | 31.93 | 1DIK1032 |
| ATOM | 941 | C   | GLU | 125 | 3.321  | 25.534 | 1.276  | 1.00 | 31.07 | 1DIK1033 |
| ATOM | 942 | O   | GLU | 125 | 3.008  | 24.504 | 0.680  | 1.00 | 31.87 | 1DIK1034 |
| ATOM | 943 | CB  | GLU | 125 | 1.875  | 27.566 | 0.985  | 1.00 | 35.88 | 1DIK1035 |
| ATOM | 944 | CG  | GLU | 125 | 1.226  | 27.149 | -0.360 | 1.00 | 46.46 | 1DIK1036 |
| ATOM | 945 | CD  | GLU | 125 | 2.239  | 26.814 | -1.475 | 1.00 | 54.36 | 1DIK1037 |
| ATOM | 946 | OE1 | GLU | 125 | 3.343  | 27.412 | -1.491 | 1.00 | 58.38 | 1DIK1038 |
| ATOM | 947 | OE2 | GLU | 125 | 1.937  | 25.955 | -2.343 | 1.00 | 54.70 | 1DIK1039 |
| ATOM | 948 | N   | SER | 126 | 4.583  | 25.929 | 1.383  | 1.00 | 28.00 | 1DIK1040 |
| ATOM | 949 | CA  | SER | 126 | 5.651  | 25.161 | 0.755  | 1.00 | 31.00 | 1DIK1041 |
| ATOM | 950 | C   | SER | 126 | 5.733  | 23.711 | 1.249  | 1.00 | 31.74 | 1DIK1042 |
| ATOM | 951 | O   | SER | 126 | 6.217  | 22.831 | 0.525  | 1.00 | 32.26 | 1DIK1043 |
| ATOM | 952 | CB  | SER | 126 | 6.992  | 25.881 | 0.936  | 1.00 | 33.57 | 1DIK1044 |
| ATOM | 953 | OG  | SER | 126 | 7.256  | 26.134 | 2.308  | 1.00 | 41.28 | 1DIK1045 |
| ATOM | 954 | N   | LEU | 127 | 5.262  | 23.476 | 2.477  | 1.00 | 28.17 | 1DIK1046 |
| ATOM | 955 | CA  | LEU | 127 | 5.246  | 22.148 | 3.087  | 1.00 | 23.13 | 1DIK1047 |
| ATOM | 956 | C   | LEU | 127 | 3.879  | 21.466 | 2.981  | 1.00 | 22.92 | 1DIK1048 |
| ATOM | 957 | O   | LEU | 127 | 3.781  | 20.304 | 2.584  | 1.00 | 24.92 | 1DIK1049 |
| ATOM | 958 | CB  | LEU | 127 | 5.601  | 22.236 | 4.569  | 1.00 | 21.37 | 1DIK1050 |
| ATOM | 959 | CG  | LEU | 127 | 7.017  | 22.618 | 4.969  | 1.00 | 24.27 | 1DIK1051 |
| ATOM | 960 | CD1 | LEU | 127 | 7.125  | 22.582 | 6.485  | 1.00 | 17.41 | 1DIK1052 |
| ATOM | 961 | CD2 | LEU | 127 | 8.006  | 21.652 | 4.316  | 1.00 | 20.13 | 1DIK1053 |
| ATOM | 962 | N   | THR | 128 | 2.833  | 22.198 | 3.352  | 1.00 | 22.22 | 1DIK1054 |
| ATOM | 963 | CA  | THR | 128 | 1.461  | 21.701 | 3.357  | 1.00 | 21.36 | 1DIK1055 |
| ATOM | 964 | C   | THR | 128 | 0.935  | 21.259 | 1.989  | 1.00 | 25.64 | 1DIK1056 |
| ATOM | 965 | O   | THR | 128 | 0.016  | 20.429 | 1.907  | 1.00 | 26.78 | 1DIK1057 |
| ATOM | 966 | CB  | THR | 128 | 0.502  | 22.765 | 3.941  | 1.00 | 18.91 | 1DIK1058 |
| ATOM | 967 | OG1 | THR | 128 | 0.687  | 24.008 | 3.248  | 1.00 | 16.25 | 1DIK1059 |
| ATOM | 968 | CG2 | THR | 128 | 0.771  | 22.971 | 5.413  | 1.00 | 8.45  | 1DIK1060 |
| ATOM | 969 | N   | ARG | 129 | 1.510  | 21.803 | 0.917  | 1.00 | 27.58 | 1DIK1061 |
| ATOM | 970 | CA  | ARG | 129 | 1.070  | 21.436 | -0.423 | 1.00 | 27.49 | 1DIK1062 |
| ATOM | 971 | C   | ARG | 129 | 1.303  | 19.975 | -0.790 | 1.00 | 24.39 | 1DIK1063 |
| ATOM | 972 | O   | ARG | 129 | 0.612  | 19.448 | -1.652 | 1.00 | 25.81 | 1DIK1064 |
| ATOM | 973 | CB  | ARG | 129 | 1.673  | 22.351 | -1.484 | 1.00 | 28.84 | 1DIK1065 |
| ATOM | 974 | CG  | ARG | 129 | 3.139  | 22.218 | -1.685 | 1.00 | 31.94 | 1DIK1066 |
| ATOM | 975 | CD  | ARG | 129 | 3.536  | 23.072 | -2.860 | 1.00 | 46.51 | 1DIK1067 |
| ATOM | 976 | NE  | ARG | 129 | 4.899  | 22.774 | -3.270 | 1.00 | 59.18 | 1DIK1068 |
| ATOM | 977 | CZ  | ARG | 129 | 5.879  | 23.669 | -3.295 | 1.00 | 67.18 | 1DIK1069 |
| ATOM | 978 | NH1 | ARG | 129 | 5.643  | 24.936 | -2.948 | 1.00 | 66.97 | 1DIK1070 |

FIG. 8-16



In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 979  | NH2 | ARG | 129 | 7.098  | 23.294 | -3.672 | 1.00 | 69.63 | 1DIK1071 |
| ATOM | 980  | N   | ASN | 130 | 2.266  | 19.306 | -0.166 | 1.00 | 26.81 | 1DIK1072 |
| ATOM | 981  | CA  | ASN | 130 | 2.456  | 17.883 | -0.470 | 1.00 | 29.49 | 1DIK1073 |
| ATOM | 982  | C   | ASN | 130 | 2.819  | 16.977 | 0.691  | 1.00 | 25.25 | 1DIK1074 |
| ATOM | 983  | O   | ASN | 130 | 3.369  | 15.904 | 0.489  | 1.00 | 22.37 | 1DIK1075 |
| ATOM | 984  | CB  | ASN | 130 | 3.407  | 17.643 | -1.657 | 1.00 | 33.67 | 1DIK1076 |
| ATOM | 985  | CG  | ASN | 130 | 4.679  | 18.415 | -1.550 | 1.00 | 35.85 | 1DIK1077 |
| ATOM | 986  | OD1 | ASN | 130 | 5.242  | 18.561 | -0.472 | 1.00 | 41.17 | 1DIK1078 |
| ATOM | 987  | ND2 | ASN | 130 | 5.148  | 18.926 | -2.678 | 1.00 | 36.92 | 1DIK1079 |
| ATOM | 988  | N   | ILE | 131 | 2.499  | 17.409 | 1.905  | 1.00 | 23.74 | 1DIK1080 |
| ATOM | 989  | CA  | ILE | 131 | 2.729  | 16.600 | 3.087  | 1.00 | 22.76 | 1DIK1081 |
| ATOM | 990  | C   | ILE | 131 | 1.405  | 16.555 | 3.857  | 1.00 | 22.22 | 1DIK1082 |
| ATOM | 991  | O   | ILE | 131 | 0.706  | 17.568 | 3.994  | 1.00 | 20.81 | 1DIK1083 |
| ATOM | 992  | CB  | ILE | 131 | 3.864  | 17.171 | 3.974  | 1.00 | 25.01 | 1DIK1084 |
| ATOM | 993  | CG1 | ILE | 131 | 5.196  | 17.051 | 3.237  | 1.00 | 22.26 | 1DIK1085 |
| ATOM | 994  | CG2 | ILE | 131 | 3.966  | 16.383 | 5.296  | 1.00 | 25.81 | 1DIK1086 |
| ATOM | 995  | CD1 | ILE | 131 | 6.264  | 18.012 | 3.705  | 1.00 | 19.55 | 1DIK1087 |
| ATOM | 996  | N   | VAL | 132 | 1.052  | 15.368 | 4.336  | 1.00 | 21.56 | 1DIK1088 |
| ATOM | 997  | CA  | VAL | 132 | -0.173 | 15.184 | 5.113  | 1.00 | 21.17 | 1DIK1089 |
| ATOM | 998  | C   | VAL | 132 | 0.285  | 15.221 | 6.575  | 1.00 | 20.81 | 1DIK1090 |
| ATOM | 999  | O   | VAL | 132 | 1.137  | 14.422 | 6.979  | 1.00 | 20.82 | 1DIK1091 |
| ATOM | 1000 | CB  | VAL | 132 | -0.841 | 13.807 | 4.803  | 1.00 | 18.52 | 1DIK1092 |
| ATOM | 1001 | CG1 | VAL | 132 | -2.123 | 13.651 | 5.597  | 1.00 | 14.56 | 1DIK1093 |
| ATOM | 1002 | CG2 | VAL | 132 | -1.126 | 13.686 | 3.320  | 1.00 | 13.43 | 1DIK1094 |
| ATOM | 1003 | N   | PRO | 133 | -0.260 | 16.151 | 7.383  | 1.00 | 20.75 | 1DIK1095 |
| ATOM | 1004 | CA  | PRO | 133 | 0.116  | 16.273 | 8.798  | 1.00 | 17.17 | 1DIK1096 |
| ATOM | 1005 | C   | PRO | 133 | -0.288 | 15.036 | 9.585  | 1.00 | 20.37 | 1DIK1097 |
| ATOM | 1006 | O   | PRO | 133 | -1.268 | 14.364 | 9.229  | 1.00 | 19.54 | 1DIK1098 |
| ATOM | 1007 | CB  | PRO | 133 | -0.684 | 17.488 | 9.277  | 1.00 | 17.52 | 1DIK1099 |
| ATOM | 1008 | CG  | PRO | 133 | -1.029 | 18.231 | 8.029  | 1.00 | 19.74 | 1DIK1100 |
| ATOM | 1009 | CD  | PRO | 133 | -1.278 | 17.151 | 7.020  | 1.00 | 21.29 | 1DIK1101 |
| ATOM | 1010 | N   | PHE | 134 | 0.467  | 14.721 | 10.641 | 1.00 | 20.95 | 1DIK1102 |
| ATOM | 1011 | CA  | PHE | 134 | 0.131  | 13.596 | 11.514 | 1.00 | 18.61 | 1DIK1103 |
| ATOM | 1012 | C   | PHE | 134 | -0.583 | 14.285 | 12.677 | 1.00 | 17.69 | 1DIK1104 |
| ATOM | 1013 | O   | PHE | 134 | -0.016 | 15.175 | 13.310 | 1.00 | 17.93 | 1DIK1105 |
| ATOM | 1014 | CB  | PHE | 134 | 1.368  | 12.847 | 12.003 | 1.00 | 17.50 | 1DIK1106 |
| ATOM | 1015 | CG  | PHE | 134 | 1.040  | 11.715 | 12.941 | 1.00 | 17.28 | 1DIK1107 |
| ATOM | 1016 | CD1 | PHE | 134 | 0.616  | 10.478 | 12.443 | 1.00 | 11.84 | 1DIK1108 |
| ATOM | 1017 | CD2 | PHE | 134 | 1.133  | 11.888 | 14.324 | 1.00 | 13.50 | 1DIK1109 |
| ATOM | 1018 | CE1 | PHE | 134 | 0.285  | 9.423  | 13.310 | 1.00 | 11.64 | 1DIK1110 |
| ATOM | 1019 | CE2 | PHE | 134 | 0.804  | 10.837 | 15.203 | 1.00 | 12.13 | 1DIK1111 |
| ATOM | 1020 | CZ  | PHE | 134 | 0.379  | 9.607  | 14.693 | 1.00 | 15.07 | 1DIK1112 |
| ATOM | 1021 | N   | ILE | 135 | -1.816 | 13.863 | 12.949 | 1.00 | 15.82 | 1DIK1113 |
| ATOM | 1022 | CA  | ILE | 135 | -2.670 | 14.495 | 13.953 | 1.00 | 13.71 | 1DIK1114 |
| ATOM | 1023 | C   | ILE | 135 | -3.088 | 13.644 | 15.156 | 1.00 | 14.35 | 1DIK1115 |
| ATOM | 1024 | O   | ILE | 135 | -3.425 | 12.461 | 15.015 | 1.00 | 16.80 | 1DIK1116 |
| ATOM | 1025 | CB  | ILE | 135 | -3.952 | 15.018 | 13.243 | 1.00 | 11.04 | 1DIK1117 |
| ATOM | 1026 | CG1 | ILE | 135 | -3.568 | 15.994 | 12.134 | 1.00 | 9.94  | 1DIK1118 |
| ATOM | 1027 | CG2 | ILE | 135 | -4.906 | 15.690 | 14.222 | 1.00 | 15.43 | 1DIK1119 |
| ATOM | 1028 | CD1 | ILE | 135 | -4.731 | 16.360 | 11.245 | 1.00 | 11.33 | 1DIK1120 |
| ATOM | 1029 | N   | ARG | 136 | -3.074 | 14.259 | 16.335 | 1.00 | 13.24 | 1DIK1121 |
| ATOM | 1030 | CA  | ARG | 136 | -3.480 | 13.593 | 17.571 | 1.00 | 15.19 | 1DIK1122 |
| ATOM | 1031 | C   | ARG | 136 | -4.451 | 14.511 | 18.296 | 1.00 | 16.07 | 1DIK1123 |
| ATOM | 1032 | O   | ARG | 136 | -4.355 | 15.734 | 18.190 | 1.00 | 16.44 | 1DIK1124 |
| ATOM | 1033 | CB  | ARG | 136 | -2.289 | 13.322 | 18.487 | 1.00 | 13.97 | 1DIK1125 |
| ATOM | 1034 | CG  | ARG | 136 | -1.203 | 12.434 | 17.905 | 1.00 | 12.99 | 1DIK1126 |
| ATOM | 1035 | CD  | ARG | 136 | -0.176 | 12.079 | 18.973 | 1.00 | 14.14 | 1DIK1127 |
| ATOM | 1036 | NE  | ARG | 136 | 0.441  | 13.277 | 19.540 | 1.00 | 22.30 | 1DIK1128 |
| ATOM | 1037 | CZ  | ARG | 136 | 1.335  | 13.288 | 20.525 | 1.00 | 20.79 | 1DIK1129 |
| ATOM | 1038 | NH1 | ARG | 136 | 1.743  | 12.150 | 21.081 | 1.00 | 17.01 | 1DIK1130 |
| ATOM | 1039 | NH2 | ARG | 136 | 1.819  | 14.450 | 20.951 | 1.00 | 17.84 | 1DIK1131 |
| ATOM | 1040 | N   | SER | 137 | -5.378 | 13.918 | 19.035 | 1.00 | 16.59 | 1DIK1132 |
| ATOM | 1041 | CA  | SER | 137 | -6.381 | 14.663 | 19.789 | 1.00 | 14.27 | 1DIK1133 |
| ATOM | 1042 | C   | SER | 137 | -6.624 | 13.982 | 21.147 | 1.00 | 17.11 | 1DIK1134 |
| ATOM | 1043 | O   | SER | 137 | -6.549 | 12.754 | 21.272 | 1.00 | 16.51 | 1DIK1135 |
| ATOM | 1044 | CB  | SER | 137 | -7.682 | 14.703 | 18.966 | 1.00 | 13.24 | 1DIK1136 |

FIG. 8-17



In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1045 | OG  | SER | 137 | -8.804  | 15.178 | 19.690 | 1.00 | 13.55 | 1DIK1137 |
| ATOM | 1046 | N   | SER | 138 | -6.898  | 14.782 | 22.169 | 1.00 | 18.79 | 1DIK1138 |
| ATOM | 1047 | CA  | SER | 138 | -7.212  | 14.246 | 23.486 | 1.00 | 18.47 | 1DIK1139 |
| ATOM | 1048 | C   | SER | 138 | -8.651  | 13.714 | 23.338 | 1.00 | 20.67 | 1DIK1140 |
| ATOM | 1049 | O   | SER | 138 | -9.436  | 14.261 | 22.557 | 1.00 | 21.12 | 1DIK1141 |
| ATOM | 1050 | CB  | SER | 138 | -7.123  | 15.360 | 24.526 | 1.00 | 19.25 | 1DIK1142 |
| ATOM | 1051 | OG  | SER | 138 | -7.161  | 14.832 | 25.831 | 1.00 | 19.54 | 1DIK1143 |
| ATOM | 1052 | N   | GLY | 139 | -9.005  | 12.660 | 24.070 | 1.00 | 24.07 | 1DIK1144 |
| ATOM | 1053 | CA  | GLY | 139 | -10.326 | 12.064 | 23.923 | 1.00 | 23.86 | 1DIK1145 |
| ATOM | 1054 | C   | GLY | 139 | -11.511 | 12.774 | 24.550 | 1.00 | 26.14 | 1DIK1146 |
| ATOM | 1055 | O   | GLY | 139 | -12.114 | 12.261 | 25.491 | 1.00 | 33.68 | 1DIK1147 |
| ATOM | 1056 | N   | SER | 140 | -11.853 | 13.946 | 24.046 | 1.00 | 23.95 | 1DIK1148 |
| ATOM | 1057 | CA  | SER | 140 | -12.976 | 14.715 | 24.553 | 1.00 | 18.34 | 1DIK1149 |
| ATOM | 1058 | C   | SER | 140 | -13.709 | 15.148 | 23.296 | 1.00 | 21.76 | 1DIK1150 |
| ATOM | 1059 | O   | SER | 140 | -13.084 | 15.655 | 22.356 | 1.00 | 22.25 | 1DIK1151 |
| ATOM | 1060 | CB  | SER | 140 | -12.479 | 15.925 | 25.319 | 1.00 | 17.99 | 1DIK1152 |
| ATOM | 1061 | OG  | SER | 140 | -13.543 | 16.819 | 25.617 | 1.00 | 22.47 | 1DIK1153 |
| ATOM | 1062 | N   | SER | 141 | -15.024 | 14.959 | 23.274 | 1.00 | 19.07 | 1DIK1154 |
| ATOM | 1063 | CA  | SER | 141 | -15.825 | 15.278 | 22.097 | 1.00 | 21.60 | 1DIK1155 |
| ATOM | 1064 | C   | SER | 141 | -15.592 | 16.644 | 21.496 | 1.00 | 22.01 | 1DIK1156 |
| ATOM | 1065 | O   | SER | 141 | -15.468 | 16.764 | 20.275 | 1.00 | 23.16 | 1DIK1157 |
| ATOM | 1066 | CB  | SER | 141 | -17.303 | 15.111 | 22.399 | 1.00 | 23.43 | 1DIK1158 |
| ATOM | 1067 | OG  | SER | 141 | -17.480 | 14.054 | 23.319 | 1.00 | 40.45 | 1DIK1159 |
| ATOM | 1068 | N   | ARG | 142 | -15.526 | 17.675 | 22.335 | 1.00 | 19.81 | 1DIK1160 |
| ATOM | 1069 | CA  | ARG | 142 | -15.325 | 19.010 | 21.809 | 1.00 | 18.48 | 1DIK1161 |
| ATOM | 1070 | C   | ARG | 142 | -13.951 | 19.187 | 21.180 | 1.00 | 18.52 | 1DIK1162 |
| ATOM | 1071 | O   | ARG | 142 | -13.779 | 19.999 | 20.264 | 1.00 | 17.81 | 1DIK1163 |
| ATOM | 1072 | CB  | ARG | 142 | -15.580 | 20.072 | 22.885 | 1.00 | 17.69 | 1DIK1164 |
| ATOM | 1073 | CG  | ARG | 142 | -14.661 | 20.050 | 24.069 | 1.00 | 20.10 | 1DIK1165 |
| ATOM | 1074 | CD  | ARG | 142 | -14.952 | 21.269 | 24.913 | 1.00 | 23.72 | 1DIK1166 |
| ATOM | 1075 | NE  | ARG | 142 | -14.441 | 21.157 | 26.280 | 1.00 | 27.97 | 1DIK1167 |
| ATOM | 1076 | CZ  | ARG | 142 | -15.100 | 20.586 | 27.292 | 1.00 | 28.86 | 1DIK1168 |
| ATOM | 1077 | NH1 | ARG | 142 | -16.301 | 20.053 | 27.106 | 1.00 | 28.91 | 1DIK1169 |
| ATOM | 1078 | NH2 | ARG | 142 | -14.552 | 20.543 | 28.499 | 1.00 | 29.64 | 1DIK1170 |
| ATOM | 1079 | N   | VAL | 143 | -12.973 | 18.424 | 21.662 | 1.00 | 18.71 | 1DIK1171 |
| ATOM | 1080 | CA  | VAL | 143 | -11.620 | 18.516 | 21.137 | 1.00 | 16.09 | 1DIK1172 |
| ATOM | 1081 | C   | VAL | 143 | -11.561 | 17.777 | 19.799 | 1.00 | 19.00 | 1DIK1173 |
| ATOM | 1082 | O   | VAL | 143 | -11.031 | 18.303 | 18.802 | 1.00 | 19.96 | 1DIK1174 |
| ATOM | 1083 | CB  | VAL | 143 | -10.604 | 17.962 | 22.152 | 1.00 | 14.17 | 1DIK1175 |
| ATOM | 1084 | CG1 | VAL | 143 | -9.179  | 18.106 | 21.630 | 1.00 | 13.33 | 1DIK1176 |
| ATOM | 1085 | CG2 | VAL | 143 | -10.746 | 18.717 | 23.450 | 1.00 | 11.92 | 1DIK1177 |
| ATOM | 1086 | N   | ILE | 144 | -12.132 | 16.576 | 19.778 | 1.00 | 17.56 | 1DIK1178 |
| ATOM | 1087 | CA  | ILE | 144 | -12.177 | 15.752 | 18.582 | 1.00 | 17.36 | 1DIK1179 |
| ATOM | 1088 | C   | ILE | 144 | -12.882 | 16.490 | 17.431 | 1.00 | 19.27 | 1DIK1180 |
| ATOM | 1089 | O   | ILE | 144 | -12.400 | 16.492 | 16.281 | 1.00 | 20.66 | 1DIK1181 |
| ATOM | 1090 | CB  | ILE | 144 | -12.874 | 14.422 | 18.911 | 1.00 | 21.52 | 1DIK1182 |
| ATOM | 1091 | CG1 | ILE | 144 | -11.943 | 13.584 | 19.789 | 1.00 | 21.60 | 1DIK1183 |
| ATOM | 1092 | CG2 | ILE | 144 | -13.274 | 13.677 | 17.637 | 1.00 | 18.16 | 1DIK1184 |
| ATOM | 1093 | CD1 | ILE | 144 | -12.628 | 12.446 | 20.491 | 1.00 | 28.65 | 1DIK1185 |
| ATOM | 1094 | N   | ALA | 145 | -14.013 | 17.123 | 17.742 | 1.00 | 17.39 | 1DIK1186 |
| ATOM | 1095 | CA  | ALA | 145 | -14.780 | 17.889 | 16.752 | 1.00 | 15.97 | 1DIK1187 |
| ATOM | 1096 | C   | ALA | 145 | -13.951 | 19.066 | 16.243 | 1.00 | 18.18 | 1DIK1188 |
| ATOM | 1097 | O   | ALA | 145 | -14.049 | 19.436 | 15.073 | 1.00 | 20.54 | 1DIK1189 |
| ATOM | 1098 | CB  | ALA | 145 | -16.080 | 18.397 | 17.362 | 1.00 | 11.92 | 1DIK1190 |
| ATOM | 1099 | N   | SER | 146 | -13.141 | 19.654 | 17.125 | 1.00 | 17.49 | 1DIK1191 |
| ATOM | 1110 | CA  | SER | 146 | -12.273 | 20.768 | 16.759 | 1.00 | 18.53 | 1DIK1192 |
| ATOM | 1101 | C   | SER | 146 | -11.188 | 20.288 | 15.788 | 1.00 | 17.95 | 1DIK1193 |
| ATOM | 1102 | O   | SER | 146 | -10.843 | 20.988 | 14.823 | 1.00 | 15.32 | 1DIK1194 |
| ATOM | 1103 | CB  | SER | 146 | -11.648 | 21.379 | 18.015 | 1.00 | 20.60 | 1DIK1195 |
| ATOM | 1104 | OG  | SER | 146 | -12.654 | 21.966 | 18.836 | 1.00 | 18.35 | 1DIK1196 |
| ATOM | 1105 | N   | GLY | 147 | -10.668 | 19.088 | 16.047 | 1.00 | 17.16 | 1DIK1197 |
| ATOM | 1106 | CA  | GLY | 147 | -9.658  | 18.498 | 15.182 | 1.00 | 15.76 | 1DIK1198 |
| ATOM | 1107 | C   | GLY | 147 | -10.229 | 18.313 | 13.782 | 1.00 | 18.06 | 1DIK1199 |
| ATOM | 1108 | O   | GLY | 147 | -9.582  | 18.643 | 12.786 | 1.00 | 17.79 | 1DIK1200 |
| ATOM | 1109 | N   | LYS | 148 | -11.450 | 17.790 | 13.702 | 1.00 | 17.79 | 1DIK1201 |
| ATOM | 1110 | CA  | LYS | 148 | -12.123 | 17.585 | 12.422 | 1.00 | 16.21 | 1DIK1202 |

FIG. 8-18

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1111 | C   | LYS | 148 | -12.423 | 18.870 | 11.651 | 1.00 | 17.80 | 1DIK1203 |
| ATOM | 1112 | O   | LYS | 148 | -12.351 | 18.871 | 10.414 | 1.00 | 16.69 | 1DIK1204 |
| ATOM | 1113 | CB  | LYS | 148 | -13.422 | 16.821 | 12.631 | 1.00 | 20.50 | 1DIK1205 |
| ATOM | 1114 | CG  | LYS | 148 | -13.219 | 15.389 | 13.023 | 1.00 | 22.63 | 1DIK1206 |
| ATOM | 1115 | CD  | LYS | 148 | -14.539 | 14.722 | 13.227 | 1.00 | 27.17 | 1DIK1207 |
| ATOM | 1116 | CE  | LYS | 148 | -14.342 | 13.245 | 13.427 | 1.00 | 34.56 | 1DIK1208 |
| ATOM | 1117 | NZ  | LYS | 148 | -15.652 | 12.546 | 13.477 | 1.00 | 43.70 | 1DIK1209 |
| ATOM | 1118 | N   | LYS | 149 | -12.765 | 19.956 | 12.355 | 1.00 | 16.53 | 1DIK1210 |
| ATOM | 1119 | CA  | LYS | 149 | -13.049 | 21.221 | 11.680 | 1.00 | 19.05 | 1DIK1211 |
| ATOM | 1120 | C   | LYS | 149 | -11.756 | 21.821 | 11.132 | 1.00 | 19.26 | 1DIK1212 |
| ATOM | 1121 | O   | LYS | 149 | -11.747 | 22.412 | 10.050 | 1.00 | 19.18 | 1DIK1213 |
| ATOM | 1122 | CB  | LYS | 149 | -13.725 | 22.234 | 12.608 | 1.00 | 19.43 | 1DIK1214 |
| ATOM | 1123 | CG  | LYS | 149 | -15.018 | 21.775 | 13.196 | 1.00 | 25.49 | 1DIK1215 |
| ATOM | 1124 | CD  | LYS | 149 | -15.954 | 21.157 | 12.163 | 1.00 | 24.15 | 1DIK1216 |
| ATOM | 1125 | CE  | LYS | 149 | -16.677 | 22.178 | 11.350 | 1.00 | 24.54 | 1DIK1217 |
| ATOM | 1126 | NZ  | LYS | 149 | -17.717 | 21.492 | 10.530 | 1.00 | 23.29 | 1DIK1218 |
| ATOM | 1127 | N   | PHE | 150 | -10.672 | 21.677 | 11.885 | 1.00 | 17.03 | 1DIK1219 |
| ATOM | 1128 | CA  | PHE | 150 | -9.368  | 22.178 | 11.462 | 1.00 | 17.33 | 1DIK1220 |
| ATOM | 1129 | C   | PHE | 150 | -8.992  | 21.469 | 10.163 | 1.00 | 18.46 | 1DIK1221 |
| ATOM | 1130 | O   | PHE | 150 | -8.540  | 22.104 | 9.222  | 1.00 | 20.65 | 1DIK1222 |
| ATOM | 1131 | CB  | PHE | 150 | -8.321  | 21.892 | 12.555 | 1.00 | 17.32 | 1DIK1223 |
| ATOM | 1132 | CG  | PHE | 150 | -6.916  | 22.282 | 12.185 | 1.00 | 17.15 | 1DIK1224 |
| ATOM | 1133 | CD1 | PHE | 150 | -6.110  | 21.428 | 11.433 | 1.00 | 15.76 | 1DIK1225 |
| ATOM | 1134 | CD2 | PHE | 150 | -6.387  | 23.491 | 12.601 | 1.00 | 16.86 | 1DIK1226 |
| ATOM | 1135 | CE1 | PHE | 150 | -4.803  | 21.769 | 11.102 | 1.00 | 13.21 | 1DIK1227 |
| ATOM | 1136 | CE2 | PHE | 150 | -5.075  | 23.841 | 12.274 | 1.00 | 18.79 | 1DIK1228 |
| ATOM | 1137 | CZ  | PHE | 150 | -4.283  | 22.973 | 11.521 | 1.00 | 18.15 | 1DIK1229 |
| ATOM | 1138 | N   | ILE | 151 | -9.186  | 20.151 | 10.123 | 1.00 | 18.70 | 1DIK1230 |
| ATOM | 1139 | CA  | ILE | 151 | -8.887  | 19.337 | 8.949  | 1.00 | 16.84 | 1DIK1231 |
| ATOM | 1140 | C   | ILE | 151 | -9.700  | 19.829 | 7.751  | 1.00 | 21.25 | 1DIK1232 |
| ATOM | 1141 | O   | ILE | 151 | -9.212  | 19.895 | 6.621  | 1.00 | 22.35 | 1DIK1233 |
| ATOM | 1142 | CB  | ILE | 151 | -9.205  | 17.858 | 9.229  | 1.00 | 19.09 | 1DIK1234 |
| ATOM | 1143 | CG1 | ILE | 151 | -8.109  | 17.255 | 10.109 | 1.00 | 15.35 | 1DIK1235 |
| ATOM | 1144 | CG2 | ILE | 151 | -9.324  | 17.067 | 7.938  | 1.00 | 15.46 | 1DIK1236 |
| ATOM | 1145 | CD1 | ILE | 151 | -8.418  | 15.850 | 10.569 | 1.00 | 15.29 | 1DIK1237 |
| ATOM | 1146 | N   | GLU | 152 | -10.948 | 20.181 | 8.001  | 1.00 | 22.78 | 1DIK1238 |
| ATOM | 1147 | CA  | GLU | 152 | -11.821 | 20.692 | 6.954  | 1.00 | 22.06 | 1DIK1239 |
| ATOM | 1148 | C   | GLU | 152 | -11.208 | 21.958 | 6.339  | 1.00 | 22.51 | 1DIK1240 |
| ATOM | 1149 | O   | GLU | 152 | -11.019 | 22.033 | 5.125  | 1.00 | 27.84 | 1DIK1241 |
| ATOM | 1150 | CB  | GLU | 152 | -13.186 | 20.998 | 7.560  | 1.00 | 23.89 | 1DIK1242 |
| ATOM | 1151 | CG  | GLU | 152 | -14.321 | 21.169 | 6.578  | 1.00 | 27.41 | 1DIK1243 |
| ATOM | 1152 | CD  | GLU | 152 | -15.650 | 21.403 | 7.293  | 1.00 | 27.55 | 1DIK1244 |
| ATOM | 1153 | OE1 | GLU | 152 | -15.975 | 20.635 | 8.241  | 1.00 | 21.35 | 1DIK1245 |
| ATOM | 1154 | OE2 | GLU | 152 | -16.357 | 22.358 | 6.897  | 1.00 | 28.87 | 1DIK1246 |
| ATOM | 1155 | N   | GLY | 153 | -10.892 | 22.943 | 7.176  | 1.00 | 20.57 | 1DIK1247 |
| ATOM | 1156 | CA  | GLY | 153 | -10.305 | 24.177 | 6.693  | 1.00 | 19.76 | 1DIK1248 |
| ATOM | 1157 | C   | GLY | 153 | -8.990  | 23.965 | 5.955  | 1.00 | 23.46 | 1DIK1249 |
| ATOM | 1158 | O   | GLY | 153 | -8.773  | 24.528 | 4.886  | 1.00 | 25.73 | 1DIK1250 |
| ATOM | 1159 | N   | PHE | 154 | -8.114  | 23.145 | 6.528  | 1.00 | 22.50 | 1DIK1251 |
| ATOM | 1160 | CA  | PHE | 154 | -6.803  | 22.835 | 5.958  | 1.00 | 18.12 | 1DIK1252 |
| ATOM | 1161 | C   | PHE | 154 | -6.921  | 22.181 | 4.570  | 1.00 | 21.03 | 1DIK1253 |
| ATOM | 1162 | O   | PHE | 154 | -6.275  | 22.606 | 3.595  | 1.00 | 16.52 | 1DIK1254 |
| ATOM | 1163 | CB  | PHE | 154 | -6.048  | 21.909 | 6.937  | 1.00 | 16.95 | 1DIK1255 |
| ATOM | 1164 | CG  | PHE | 154 | -4.730  | 21.407 | 6.422  | 1.00 | 14.32 | 1DIK1256 |
| ATOM | 1165 | CD1 | PHE | 154 | -4.666  | 20.253 | 5.635  | 1.00 | 13.33 | 1DIK1257 |
| ATOM | 1166 | CD2 | PHE | 154 | -3.548  | 22.093 | 6.713  | 1.00 | 14.60 | 1DIK1258 |
| ATOM | 1167 | CE1 | PHE | 154 | -3.432  | 19.781 | 5.134  | 1.00 | 13.26 | 1DIK1259 |
| ATOM | 1168 | CE2 | PHE | 154 | -2.308  | 21.639 | 6.224  | 1.00 | 15.41 | 1DIK1260 |
| ATOM | 1169 | CZ  | PHE | 154 | -2.250  | 20.483 | 5.432  | 1.00 | 15.03 | 1DIK1261 |
| ATOM | 1170 | N   | GLN | 155 | -7.757  | 21.152 | 4.479  | 1.00 | 20.29 | 1DIK1262 |
| ATOM | 1171 | CA  | GLN | 155 | -7.921  | 20.441 | 3.231  | 1.00 | 21.66 | 1DIK1263 |
| ATOM | 1172 | C   | GLN | 155 | -8.626  | 21.290 | 2.170  | 1.00 | 25.36 | 1DIK1264 |
| ATOM | 1173 | O   | GLN | 155 | -8.255  | 21.256 | 0.983  | 1.00 | 26.48 | 1DIK1265 |
| ATOM | 1174 | CB  | GLN | 155 | -8.653  | 19.118 | 3.475  | 1.00 | 21.80 | 1DIK1266 |
| ATOM | 1175 | CG  | GLN | 155 | -8.471  | 18.085 | 2.369  | 1.00 | 27.70 | 1DIK1267 |
| ATOM | 1176 | CD  | GLN | 155 | -7.001  | 17.785 | 2.056  | 1.00 | 32.63 | 1DIK1268 |

FIG. 8-19

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1177 | OE1 | GLN | 155 | -6.105  | 18.052 | 2.859  | 1.00 | 34.93 | 1DIK1269 |
| ATOM | 1178 | NE2 | GLN | 155 | -6.753  | 17.229 | 0.883  | 1.00 | 32.41 | 1DIK1270 |
| ATOM | 1179 | N   | SER | 156 | -9.628  | 22.059 | 2.581  | 1.00 | 22.38 | 1DIK1271 |
| ATOM | 1180 | CA  | SER | 156 | -10.355 | 22.911 | 1.632  | 1.00 | 27.24 | 1DIK1272 |
| ATOM | 1181 | C   | SER | 156 | -9.474  | 23.925 | 0.912  | 1.00 | 26.37 | 1DIK1273 |
| ATOM | 1182 | O   | SER | 156 | -9.733  | 24.273 | -0.246 | 1.00 | 26.94 | 1DIK1274 |
| ATOM | 1183 | CB  | SER | 156 | -11.477 | 23.644 | 2.347  | 1.00 | 25.77 | 1DIK1275 |
| ATOM | 1184 | OG  | SER | 156 | -12.392 | 22.686 | 2.834  | 1.00 | 38.06 | 1DIK1276 |
| ATOM | 1185 | N   | THR | 157 | -8.442  | 24.400 | 1.610  | 1.00 | 25.19 | 1DIK1277 |
| ATOM | 1186 | CA  | THR | 157 | -7.499  | 25.365 | 1.062  | 1.00 | 22.52 | 1DIK1278 |
| ATOM | 1187 | C   | THR | 157 | -6.535  | 24.632 | 0.123  | 1.00 | 24.65 | 1DIK1279 |
| ATOM | 1188 | O   | THR | 157 | -6.147  | 25.163 | -0.928 | 1.00 | 23.24 | 1DIK1280 |
| ATOM | 1189 | CB  | THR | 157 | -6.702  | 26.040 | 2.189  | 1.00 | 21.15 | 1DIK1281 |
| ATOM | 1190 | OG1 | THR | 157 | -7.599  | 26.414 | 3.238  | 1.00 | 24.29 | 1DIK1282 |
| ATOM | 1191 | CG2 | THR | 157 | -6.012  | 27.292 | 1.679  | 1.00 | 16.11 | 1DIK1283 |
| ATOM | 1192 | N   | LYS | 158 | -6.161  | 23.411 | 0.509  | 1.00 | 21.14 | 1DIK1284 |
| ATOM | 1193 | CA  | LYS | 158 | -5.254  | 22.599 | -0.279 | 1.00 | 22.69 | 1DIK1285 |
| ATOM | 1194 | C   | LYS | 158 | -5.848  | 22.241 | -1.656 | 1.00 | 22.91 | 1DIK1286 |
| ATOM | 1195 | O   | LYS | 158 | -5.131  | 22.216 | -2.655 | 1.00 | 20.40 | 1DIK1287 |
| ATOM | 1196 | CB  | LYS | 158 | -4.890  | 21.335 | 0.495  | 1.00 | 20.54 | 1DIK1288 |
| ATOM | 1197 | CG  | LYS | 158 | -3.806  | 20.504 | -0.174 | 1.00 | 20.74 | 1DIK1289 |
| ATOM | 1198 | CD  | LYS | 158 | -3.200  | 19.556 | 0.829  | 1.00 | 24.06 | 1DIK1290 |
| ATOM | 1199 | CE  | LYS | 158 | -2.215  | 18.618 | 0.187  | 1.00 | 20.01 | 1DIK1291 |
| ATOM | 1200 | NZ  | LYS | 158 | -1.529  | 17.800 | 1.220  | 1.00 | 21.14 | 1DIK1292 |
| ATOM | 1201 | N   | LEU | 159 | -7.151  | 21.972 | -1.703 | 1.00 | 22.71 | 1DIK1293 |
| ATOM | 1202 | CA  | LEU | 159 | -7.819  | 21.638 | -2.959 | 1.00 | 24.27 | 1DIK1294 |
| ATOM | 1203 | C   | LEU | 159 | -7.784  | 22.786 | -3.940 | 1.00 | 26.47 | 1DIK1295 |
| ATOM | 1204 | O   | LEU | 159 | -7.781  | 22.558 | -5.144 | 1.00 | 29.65 | 1DIK1296 |
| ATOM | 1205 | CB  | LEU | 159 | -9.286  | 21.297 | -2.743 | 1.00 | 21.63 | 1DIK1297 |
| ATOM | 1206 | CG  | LEU | 159 | -9.611  | 20.081 | -1.913 | 1.00 | 25.68 | 1DIK1298 |
| ATOM | 1207 | CD1 | LEU | 159 | -11.110 | 20.032 | -1.750 | 1.00 | 29.97 | 1DIK1299 |
| ATOM | 1208 | CD2 | LEU | 159 | -9.069  | 18.832 | -2.571 | 1.00 | 25.43 | 1DIK1300 |
| ATOM | 1209 | N   | LYS | 160 | -7.781  | 24.015 | -3.428 | 1.00 | 27.67 | 1DIK1301 |
| ATOM | 1210 | CA  | LYS | 160 | -7.759  | 25.196 | -4.281 | 1.00 | 27.18 | 1DIK1302 |
| ATOM | 1211 | C   | LYS | 160 | -6.343  | 25.615 | -4.632 | 1.00 | 27.06 | 1DIK1303 |
| ATOM | 1212 | O   | LYS | 160 | -6.161  | 26.651 | -5.268 | 1.00 | 31.28 | 1DIK1304 |
| ATOM | 1213 | CB  | LYS | 160 | -8.426  | 26.383 | -3.592 | 1.00 | 29.62 | 1DIK1305 |
| ATOM | 1214 | CG  | LYS | 160 | -9.827  | 26.183 | -3.080 | 1.00 | 31.58 | 1DIK1306 |
| ATOM | 1215 | CD  | LYS | 160 | -10.152 | 27.402 | -2.228 | 1.00 | 41.75 | 1DIK1307 |
| ATOM | 1216 | CE  | LYS | 160 | -11.463 | 27.266 | -1.482 | 1.00 | 49.39 | 1DIK1308 |
| ATOM | 1217 | NZ  | LYS | 160 | -11.817 | 28.556 | -0.806 | 1.00 | 51.98 | 1DIK1309 |
| ATOM | 1218 | N   | ASP | 161 | -5.343  | 24.840 | -4.223 | 1.00 | 25.13 | 1DIK1310 |
| ATOM | 1219 | CA  | ASP | 161 | -3.954  | 25.193 | -4.506 | 1.00 | 27.83 | 1DIK1311 |
| ATOM | 1220 | C   | ASP | 161 | -3.416  | 24.467 | -5.758 | 1.00 | 30.73 | 1DIK1312 |
| ATOM | 1221 | O   | ASP | 161 | -3.237  | 23.250 | -5.753 | 1.00 | 29.13 | 1DIK1313 |
| ATOM | 1222 | CB  | ASP | 161 | -3.082  | 24.897 | -3.276 | 1.00 | 27.42 | 1DIK1314 |
| ATOM | 1223 | CG  | ASP | 161 | -1.642  | 25.368 | -3.442 | 1.00 | 30.76 | 1DIK1315 |
| ATOM | 1224 | OD1 | ASP | 161 | -1.314  | 25.998 | -4.468 | 1.00 | 38.67 | 1DIK1316 |
| ATOM | 1225 | OD2 | ASP | 161 | -0.819  | 25.114 | -2.542 | 1.00 | 29.87 | 1DIK1317 |
| ATOM | 1226 | N   | PRO | 162 | -3.134  | 25.222 | -6.842 | 1.00 | 33.61 | 1DIK1318 |
| ATOM | 1227 | CA  | PRO | 162 | -2.622  | 24.685 | -8.110 | 1.00 | 33.28 | 1DIK1319 |
| ATOM | 1228 | C   | PRO | 162 | -1.352  | 23.853 | -7.960 | 1.00 | 33.91 | 1DIK1320 |
| ATOM | 1229 | O   | PRO | 162 | -1.148  | 22.886 | -8.684 | 1.00 | 34.55 | 1DIK1321 |
| ATOM | 1230 | CB  | PRO | 162 | -2.354  | 25.947 | -8.932 | 1.00 | 33.55 | 1DIK1322 |
| ATOM | 1231 | CG  | PRO | 162 | -3.370  | 26.919 | -8.413 | 1.00 | 33.99 | 1DIK1323 |
| ATOM | 1232 | CD  | PRO | 162 | -3.274  | 26.690 | -6.927 | 1.00 | 34.27 | 1DIK1324 |
| ATOM | 1233 | N   | ARG | 163 | -0.502  | 24.231 | -7.017 | 1.00 | 36.00 | 1DIK1325 |
| ATOM | 1234 | CA  | ARG | 163 | 0.758   | 23.529 | -6.799 | 1.00 | 36.01 | 1DIK1326 |
| ATOM | 1235 | C   | ARG | 163 | 0.664   | 22.345 | -5.833 | 1.00 | 34.24 | 1DIK1327 |
| ATOM | 1236 | O   | ARG | 163 | 1.669   | 21.693 | -5.548 | 1.00 | 31.55 | 1DIK1328 |
| ATOM | 1237 | CB  | ARG | 163 | 1.802   | 24.525 | -6.310 | 1.00 | 42.55 | 1DIK1329 |
| ATOM | 1238 | CG  | ARG | 163 | 1.929   | 25.753 | -7.205 | 1.00 | 53.77 | 1DIK1330 |
| ATOM | 1239 | CD  | ARG | 163 | 3.014   | 26.683 | -6.704 | 1.00 | 63.94 | 1DIK1331 |
| ATOM | 1240 | NE  | ARG | 163 | 4.304   | 25.997 | -6.634 | 1.00 | 74.87 | 1DIK1332 |
| ATOM | 1241 | CZ  | ARG | 163 | 5.337   | 26.386 | -5.886 | 1.00 | 79.93 | 1DIK1333 |
| ATOM | 1242 | NH1 | ARG | 163 | 5.258   | 27.468 | -5.123 | 1.00 | 82.39 | 1DIK1334 |

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 1243 | NH2 | ARG | 163 | 6.464  | 25.685 | -5.902 | 1.00 | 84.40 | 1DIK1335 |
| ATOM | 1244 | N   | ALA | 164 | -0.539 | 22.072 | -5.331 | 1.00 | 33.77 | 1DIK1336 |
| ATOM | 1245 | CA  | ALA | 164 | -0.762 | 20.962 | -4.407 | 1.00 | 34.08 | 1DIK1337 |
| ATOM | 1246 | C   | ALA | 164 | -0.656 | 19.630 | -5.149 | 1.00 | 35.29 | 1DIK1338 |
| ATOM | 1247 | O   | ALA | 164 | -0.984 | 19.540 | -6.325 | 1.00 | 36.67 | 1DIK1339 |
| ATOM | 1248 | CB  | ALA | 164 | -2.130 | 21.087 | -3.744 | 1.00 | 33.17 | 1DIK1340 |
| ATOM | 1249 | N   | GLN | 165 | -0.197 | 18.593 | -4.460 | 1.00 | 38.92 | 1DIK1341 |
| ATOM | 1250 | CA  | GLN | 165 | -0.035 | 17.283 | -5.076 | 1.00 | 38.56 | 1DIK1342 |
| ATOM | 1251 | C   | GLN | 165 | -1.336 | 16.530 | -5.281 | 1.00 | 35.34 | 1DIK1343 |
| ATOM | 1252 | O   | GLN | 165 | -2.031 | 16.207 | -4.319 | 1.00 | 38.47 | 1DIK1344 |
| ATOM | 1253 | CB  | GLN | 165 | 0.895  | 16.422 | -4.248 | 1.00 | 42.23 | 1DIK1345 |
| ATOM | 1254 | CG  | GLN | 165 | 1.155  | 15.104 | -4.907 | 1.00 | 52.03 | 1DIK1346 |
| ATOM | 1255 | CD  | GLN | 165 | 2.472  | 14.565 | -4.502 | 1.00 | 57.76 | 1DIK1347 |
| ATOM | 1256 | OE1 | GLN | 165 | 3.461  | 14.718 | -5.224 | 1.00 | 62.19 | 1DIK1348 |
| ATOM | 1257 | NE2 | GLN | 165 | 2.516  | 13.932 | -3.332 | 1.00 | 58.19 | 1DIK1349 |
| ATOM | 1258 | N   | PRO | 166 | -1.664 | 16.207 | -6.542 | 1.00 | 33.99 | 1DIK1350 |
| ATOM | 1259 | CA  | PRO | 166 | -2.902 | 15.485 | -6.886 | 1.00 | 31.51 | 1DIK1351 |
| ATOM | 1260 | C   | PRO | 166 | -3.006 | 14.057 | -6.326 | 1.00 | 28.15 | 1DIK1352 |
| ATOM | 1261 | O   | PRO | 166 | -2.010 | 13.348 | -6.240 | 1.00 | 30.43 | 1DIK1353 |
| ATOM | 1262 | CB  | PRO | 166 | -2.889 | 15.502 | -8.420 | 1.00 | 28.29 | 1DIK1354 |
| ATOM | 1263 | CG  | PRO | 166 | -1.405 | 15.492 | -8.737 | 1.00 | 29.54 | 1DIK1355 |
| ATOM | 1264 | CD  | PRO | 166 | -0.854 | 16.486 | -7.747 | 1.00 | 28.70 | 1DIK1356 |
| ATOM | 1265 | N   | GLY | 167 | -4.215 | 13.656 | -5.940 | 1.00 | 24.69 | 1DIK1357 |
| ATOM | 1266 | CA  | GLY | 167 | -4.453 | 12.313 | -5.437 | 1.00 | 21.00 | 1DIK1358 |
| ATOM | 1267 | C   | GLY | 167 | -3.990 | 11.986 | -4.032 | 1.00 | 25.28 | 1DIK1359 |
| ATOM | 1268 | O   | GLY | 167 | -4.190 | 10.867 | -3.550 | 1.00 | 27.36 | 1DIK1360 |
| ATOM | 1269 | N   | GLN | 168 | -3.372 | 12.951 | -3.367 | 1.00 | 24.69 | 1DIK1361 |
| ATOM | 1270 | CA  | GLN | 168 | -2.882 | 12.759 | -2.010 | 1.00 | 24.46 | 1DIK1362 |
| ATOM | 1271 | C   | GLN | 168 | -4.065 | 12.534 | -1.062 | 1.00 | 24.95 | 1DIK1363 |
| ATOM | 1272 | O   | GLN | 168 | -5.177 | 13.035 | -1.295 | 1.00 | 24.47 | 1DIK1364 |
| ATOM | 1273 | CB  | GLN | 168 | -2.081 | 13.987 | -1.596 | 1.00 | 26.68 | 1DIK1365 |
| ATOM | 1274 | CG  | GLN | 168 | -1.155 | 13.744 | -0.439 | 1.00 | 30.05 | 1DIK1366 |
| ATOM | 1275 | CD  | GLN | 168 | -0.012 | 14.736 | -0.405 | 1.00 | 33.87 | 1DIK1367 |
| ATOM | 1276 | OE1 | GLN | 168 | -0.185 | 15.937 | -0.685 | 1.00 | 29.61 | 1DIK1368 |
| ATOM | 1277 | NE2 | GLN | 168 | 1.176  | 14.239 | -0.064 | 1.00 | 30.19 | 1DIK1369 |
| ATOM | 1278 | N   | SER | 169 | -3.853 | 11.781 | 0.005  | 1.00 | 23.60 | 1DIK1370 |
| ATOM | 1279 | CA  | SER | 169 | -4.958 | 11.530 | 0.916  | 1.00 | 26.25 | 1DIK1371 |
| ATOM | 1280 | C   | SER | 169 | -5.214 | 12.673 | 1.896  | 1.00 | 25.94 | 1DIK1372 |
| ATOM | 1281 | O   | SER | 169 | -4.342 | 13.503 | 2.146  | 1.00 | 29.04 | 1DIK1373 |
| ATOM | 1282 | CB  | SER | 169 | -4.737 | 10.205 | 1.652  | 1.00 | 26.64 | 1DIK1374 |
| ATOM | 1283 | OG  | SER | 169 | -3.432 | 10.135 | 2.184  | 1.00 | 35.33 | 1DIK1375 |
| ATOM | 1284 | N   | SER | 170 | -6.418 | 12.724 | 2.444  | 1.00 | 25.08 | 1DIK1376 |
| ATOM | 1285 | CA  | SER | 170 | -6.756 | 13.759 | 3.414  | 1.00 | 23.05 | 1DIK1377 |
| ATOM | 1286 | C   | SER | 170 | -6.169 | 13.440 | 4.791  | 1.00 | 21.06 | 1DIK1378 |
| ATOM | 1287 | O   | SER | 170 | -5.867 | 12.280 | 5.101  | 1.00 | 19.23 | 1DIK1379 |
| ATOM | 1288 | CB  | SER | 170 | -8.273 | 13.838 | 3.586  | 1.00 | 20.90 | 1DIK1380 |
| ATOM | 1289 | OG  | SER | 170 | -8.909 | 14.154 | 2.380  | 1.00 | 31.58 | 1DIK1381 |
| ATOM | 1290 | N   | PRO | 171 | -5.993 | 14.463 | 5.637  | 1.00 | 20.40 | 1DIK1382 |
| ATOM | 1291 | CA  | PRO | 171 | -5.461 | 14.175 | 6.967  | 1.00 | 19.96 | 1DIK1383 |
| ATOM | 1292 | C   | PRO | 171 | -6.650 | 13.566 | 7.727  | 1.00 | 20.25 | 1DIK1384 |
| ATOM | 1293 | O   | PRO | 171 | -7.788 | 13.548 | 7.228  | 1.00 | 16.51 | 1DIK1385 |
| ATOM | 1294 | CB  | PRO | 171 | -5.147 | 15.566 | 7.531  | 1.00 | 22.09 | 1DIK1386 |
| ATOM | 1295 | CG  | PRO | 171 | -5.169 | 16.491 | 6.329  | 1.00 | 21.91 | 1DIK1387 |
| ATOM | 1296 | CD  | PRO | 171 | -6.236 | 15.905 | 5.471  | 1.00 | 22.51 | 1DIK1388 |
| ATOM | 1297 | N   | LYS | 172 | -6.397 | 13.076 | 8.931  | 1.00 | 20.67 | 1DIK1389 |
| ATOM | 1298 | CA  | LYS | 172 | -7.458 | 12.515 | 9.764  | 1.00 | 20.50 | 1DIK1390 |
| ATOM | 1299 | C   | LYS | 172 | -6.873 | 12.446 | 11.164 | 1.00 | 19.29 | 1DIK1391 |
| ATOM | 1300 | O   | LYS | 172 | -5.686 | 12.709 | 11.362 | 1.00 | 19.22 | 1DIK1392 |
| ATOM | 1301 | CB  | LYS | 172 | -7.867 | 11.114 | 9.286  | 1.00 | 18.29 | 1DIK1393 |
| ATOM | 1302 | CG  | LYS | 172 | -6.703 | 10.172 | 9.177  | 1.00 | 18.63 | 1DIK1394 |
| ATOM | 1303 | CD  | LYS | 172 | -7.122 | 8.761  | 9.350  | 1.00 | 23.30 | 1DIK1395 |
| ATOM | 1304 | CE  | LYS | 172 | -5.885 | 7.903  | 9.304  | 1.00 | 30.02 | 1DIK1396 |
| ATOM | 1305 | NZ  | LYS | 172 | -6.233 | 6.492  | 9.627  | 1.00 | 44.40 | 1DIK1397 |
| ATOM | 1306 | N   | ILE | 173 | -7.698 | 12.100 | 12.136 | 1.00 | 16.98 | 1DIK1398 |
| ATOM | 1307 | CA  | ILE | 173 | -7.218 | 11.998 | 13.493 | 1.00 | 19.06 | 1DIK1399 |
| ATOM | 1308 | C   | ILE | 173 | -6.583 | 10.614 | 13.635 | 1.00 | 22.40 | 1DIK1400 |

FIG. 8-21

|      |      |     |     |     |         |        |        |      |       |           |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|-----------|
| ATOM | 1309 | O   | ILE | 173 | -7.266  | 9.593  | 13.768 | 1.00 | 21.26 | 1DIK 1401 |
| ATOM | 1310 | CB  | ILE | 173 | -8.371  | 12.274 | 14.475 | 1.00 | 19.92 | 1DIK 1402 |
| ATOM | 1311 | CG1 | ILE | 173 | -8.868  | 13.715 | 14.232 | 1.00 | 18.99 | 1DIK 1403 |
| ATOM | 1312 | CG2 | ILE | 173 | -7.902  | 12.109 | 15.921 | 1.00 | 20.59 | 1DIK 1404 |
| ATOM | 1313 | CD1 | ILE | 173 | -10.087 | 14.103 | 14.987 | 1.00 | 16.15 | 1DIK 1405 |
| ATOM | 1314 | N   | ASP | 174 | -5.256  | 10.599 | 13.588 | 1.00 | 19.22 | 1DIK 1406 |
| ATOM | 1315 | CA  | ASP | 174 | -4.504  | 9.366  | 13.667 | 1.00 | 18.78 | 1DIK 1407 |
| ATOM | 1316 | C   | ASP | 174 | -4.495  | 8.689  | 15.021 | 1.00 | 20.21 | 1DIK 1408 |
| ATOM | 1317 | O   | ASP | 174 | -4.507  | 7.463  | 15.087 | 1.00 | 23.44 | 1DIK 1409 |
| ATOM | 1318 | CB  | ASP | 174 | -3.074  | 9.606  | 13.213 | 1.00 | 16.70 | 1DIK 1410 |
| ATOM | 1319 | CG  | ASP | 174 | -3.001  | 10.130 | 11.793 | 1.00 | 21.97 | 1DIK 1411 |
| ATOM | 1320 | OD1 | ASP | 174 | -3.185  | 9.320  | 10.853 | 1.00 | 28.66 | 1DIK 1412 |
| ATOM | 1321 | OD2 | ASP | 174 | -2.763  | 11.348 | 11.618 | 1.00 | 15.14 | 1DIK 1413 |
| ATOM | 1322 | N   | VAL | 175 | -4.464  | 9.470  | 16.099 | 1.00 | 19.64 | 1DIK 1414 |
| ATOM | 1323 | CA  | VAL | 175 | -4.453  | 8.903  | 17.449 | 1.00 | 15.74 | 1DIK 1415 |
| ATOM | 1324 | C   | VAL | 175 | -5.381  | 9.700  | 18.364 | 1.00 | 19.16 | 1DIK 1416 |
| ATOM | 1325 | O   | VAL | 175 | -5.346  | 10.942 | 18.361 | 1.00 | 22.21 | 1DIK 1417 |
| ATOM | 1326 | CB  | VAL | 175 | -3.016  | 8.940  | 18.088 | 1.00 | 15.96 | 1DIK 1418 |
| ATOM | 1327 | CG1 | VAL | 175 | -3.013  | 8.205  | 19.427 | 1.00 | 11.79 | 1DIK 1419 |
| ATOM | 1328 | CG2 | VAL | 175 | -1.967  | 8.323  | 17.154 | 1.00 | 15.25 | 1DIK 1420 |
| ATOM | 1329 | N   | VAL | 176 | -6.220  | 9.009  | 19.135 | 1.00 | 16.60 | 1DIK 1421 |
| ATOM | 1330 | CA  | VAL | 176 | -7.078  | 9.696  | 20.099 | 1.00 | 18.96 | 1DIK 1422 |
| ATOM | 1331 | C   | VAL | 176 | -6.630  | 9.238  | 21.484 | 1.00 | 18.63 | 1DIK 1423 |
| ATOM | 1332 | O   | VAL | 176 | -6.837  | 8.084  | 21.849 | 1.00 | 19.14 | 1DIK 1424 |
| ATOM | 1333 | CB  | VAL | 176 | -8.585  | 9.390  | 19.923 | 1.00 | 19.70 | 1DIK 1425 |
| ATOM | 1334 | CG1 | VAL | 176 | -9.382  | 10.058 | 21.050 | 1.00 | 18.39 | 1DIK 1426 |
| ATOM | 1335 | CG2 | VAL | 176 | -9.071  | 9.919  | 18.580 | 1.00 | 17.14 | 1DIK 1427 |
| ATOM | 1336 | N   | ILE | 177 | -6.017  | 10.135 | 22.249 | 1.00 | 16.49 | 1DIK 1428 |
| ATOM | 1337 | CA  | ILE | 177 | -5.528  | 9.790  | 23.578 | 1.00 | 18.84 | 1DIK 1429 |
| ATOM | 1338 | C   | ILE | 177 | -6.626  | 9.871  | 24.646 | 1.00 | 22.64 | 1DIK 1430 |
| ATOM | 1339 | O   | ILE | 177 | -7.233  | 10.926 | 24.877 | 1.00 | 21.84 | 1DIK 1431 |
| ATOM | 1340 | CB  | ILE | 177 | -4.331  | 10.669 | 23.959 | 1.00 | 17.93 | 1DIK 1432 |
| ATOM | 1341 | CG1 | ILE | 177 | -3.258  | 10.548 | 22.876 | 1.00 | 21.31 | 1DIK 1433 |
| ATOM | 1342 | CG2 | ILE | 177 | -3.747  | 10.209 | 25.293 | 1.00 | 13.33 | 1DIK 1434 |
| ATOM | 1343 | CD1 | ILE | 177 | -2.129  | 11.530 | 23.031 | 1.00 | 24.99 | 1DIK 1435 |
| ATOM | 1344 | N   | SER | 178 | -6.879  | 8.740  | 25.293 | 1.00 | 22.92 | 1DIK 1436 |
| ATOM | 1345 | CA  | SER | 178 | -7.913  | 8.664  | 26.308 | 1.00 | 22.43 | 1DIK 1437 |
| ATOM | 1346 | C   | SER | 178 | -7.692  | 9.620  | 27.469 | 1.00 | 23.70 | 1DIK 1438 |
| ATOM | 1347 | O   | SER | 178 | -6.562  | 9.880  | 27.896 | 1.00 | 19.07 | 1DIK 1439 |
| ATOM | 1348 | CB  | SER | 178 | -8.019  | 7.234  | 26.832 | 1.00 | 24.76 | 1DIK 1440 |
| ATOM | 1349 | OG  | SER | 178 | -8.931  | 7.149  | 27.918 | 1.00 | 26.50 | 1DIK 1441 |
| ATOM | 1350 | N   | GLU | 179 | -8.802  | 10.138 | 27.975 | 1.00 | 23.30 | 1DIK 1442 |
| ATOM | 1351 | CA  | GLU | 179 | -8.763  | 11.032 | 29.109 | 1.00 | 24.10 | 1DIK 1443 |
| ATOM | 1352 | C   | GLU | 179 | -9.145  | 10.299 | 30.390 | 1.00 | 26.08 | 1DIK 1444 |
| ATOM | 1353 | O   | GLU | 179 | -9.372  | 10.930 | 31.424 | 1.00 | 28.11 | 1DIK 1445 |
| ATOM | 1354 | CB  | GLU | 179 | -9.683  | 12.219 | 28.875 | 1.00 | 20.32 | 1DIK 1446 |
| ATOM | 1355 | CG  | GLU | 179 | -9.046  | 13.277 | 28.013 | 1.00 | 19.78 | 1DIK 1447 |
| ATOM | 1356 | CD  | GLU | 179 | -9.975  | 14.413 | 27.679 | 1.00 | 21.33 | 1DIK 1448 |
| ATOM | 1357 | OE1 | GLU | 179 | -11.081 | 14.507 | 28.248 | 1.00 | 28.21 | 1DIK 1449 |
| ATOM | 1358 | OE2 | GLU | 179 | -9.595  | 15.224 | 26.832 | 1.00 | 24.31 | 1DIK 1450 |
| ATOM | 1359 | N   | ALA | 180 | -9.220  | 8.970  | 30.326 | 1.00 | 27.12 | 1DIK 1451 |
| ATOM | 1360 | CA  | ALA | 180 | -9.554  | 8.166  | 31.501 | 1.00 | 28.40 | 1DIK 1452 |
| ATOM | 1361 | C   | ALA | 180 | -8.508  | 8.476  | 32.578 | 1.00 | 29.95 | 1DIK 1453 |
| ATOM | 1362 | O   | ALA | 180 | -7.325  | 8.664  | 32.271 | 1.00 | 28.75 | 1DIK 1454 |
| ATOM | 1363 | CB  | ALA | 180 | -9.542  | 6.694  | 31.151 | 1.00 | 22.95 | 1DIK 1455 |
| ATOM | 1364 | N   | SER | 181 | -8.944  | 8.525  | 33.831 | 1.00 | 31.85 | 1DIK 1456 |
| ATOM | 1365 | CA  | SER | 181 | -8.049  | 8.866  | 34.939 | 1.00 | 35.04 | 1DIK 1457 |
| ATOM | 1366 | C   | SER | 181 | -6.762  | 8.047  | 35.009 | 1.00 | 31.72 | 1DIK 1458 |
| ATOM | 1367 | O   | SER | 181 | -5.755  | 8.525  | 35.525 | 1.00 | 33.94 | 1DIK 1459 |
| ATOM | 1368 | CB  | SER | 181 | -8.806  | 8.770  | 36.260 | 1.00 | 36.11 | 1DIK 1460 |
| ATOM | 1369 | OG  | SER | 181 | -9.377  | 7.479  | 36.373 | 1.00 | 46.40 | 1DIK 1461 |
| ATOM | 1370 | N   | SER | 182 | -6.798  | 6.821  | 34.500 | 1.00 | 27.14 | 1DIK 1462 |
| ATOM | 1371 | CA  | SER | 182 | -5.615  | 5.963  | 34.488 | 1.00 | 29.83 | 1DIK 1463 |
| ATOM | 1372 | C   | SER | 182 | -4.792  | 6.051  | 33.181 | 1.00 | 30.65 | 1DIK 1464 |
| ATOM | 1373 | O   | SER | 182 | -3.808  | 5.329  | 33.013 | 1.00 | 35.32 | 1DIK 1465 |
| ATOM | 1374 | CB  | SER | 182 | -6.023  | 4.496  | 34.726 | 1.00 | 32.11 | 1DIK 1466 |

FIG. 8-22

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 1375 | OG  | SER | 182 | -6.967 | 4.032  | 33.757 | 1.00 | 33.33 | 1DIK1467 |
| ATOM | 1376 | N   | SER | 183 | -5.187 | 6.924  | 32.261 | 1.00 | 26.39 | 1DIK1468 |
| ATOM | 1377 | CA  | SER | 183 | -4.499 | 7.049  | 30.986 | 1.00 | 21.35 | 1DIK1469 |
| ATOM | 1378 | C   | SER | 183 | -3.268 | 7.953  | 30.986 | 1.00 | 18.80 | 1DIK1470 |
| ATOM | 1379 | O   | SER | 183 | -3.263 | 9.002  | 31.621 | 1.00 | 18.57 | 1DIK1471 |
| ATOM | 1380 | CB  | SER | 183 | -5.499 | 7.547  | 29.952 | 1.00 | 23.15 | 1DIK1472 |
| ATOM | 1381 | OG  | SER | 183 | -4.884 | 7.739  | 28.702 | 1.00 | 22.70 | 1DIK1473 |
| ATOM | 1382 | N   | ASN | 184 | -2.216 | 7.545  | 30.281 | 1.00 | 21.24 | 1DIK1474 |
| ATOM | 1383 | CA  | ASN | 184 | -1.012 | 8.383  | 30.160 | 1.00 | 22.85 | 1DIK1475 |
| ATOM | 1384 | C   | ASN | 184 | -1.287 | 9.264  | 28.942 | 1.00 | 22.55 | 1DIK1476 |
| ATOM | 1385 | O   | ASN | 184 | -1.275 | 8.786  | 27.805 | 1.00 | 21.64 | 1DIK1477 |
| ATOM | 1386 | CB  | ASN | 184 | 0.233  | 7.542  | 29.918 | 1.00 | 25.23 | 1DIK1478 |
| ATOM | 1387 | CG  | ASN | 184 | 0.476  | 6.547  | 31.027 | 1.00 | 29.76 | 1DIK1479 |
| ATOM | 1388 | OD1 | ASN | 184 | 0.631  | 6.927  | 32.186 | 1.00 | 25.74 | 1DIK1480 |
| ATOM | 1389 | ND2 | ASN | 184 | 0.505  | 5.259  | 30.680 | 1.00 | 31.61 | 1DIK1481 |
| ATOM | 1390 | N   | ASN | 185 | -1.536 | 10.546 | 29.197 | 1.00 | 20.70 | 1DIK1482 |
| ATOM | 1391 | CA  | ASN | 185 | -1.903 | 11.526 | 28.177 | 1.00 | 18.51 | 1DIK1483 |
| ATOM | 1392 | C   | ASN | 185 | -1.015 | 12.775 | 28.289 | 1.00 | 18.05 | 1DIK1484 |
| ATOM | 1393 | O   | ASN | 185 | -1.179 | 13.567 | 29.209 | 1.00 | 19.30 | 1DIK1485 |
| ATOM | 1394 | CB  | ASN | 185 | -3.386 | 11.879 | 28.421 | 1.00 | 17.92 | 1DIK1486 |
| ATOM | 1395 | CG  | ASN | 185 | -3.990 | 12.809 | 27.376 | 1.00 | 20.11 | 1DIK1487 |
| ATOM | 1396 | OD1 | ASN | 185 | -5.199 | 12.965 | 27.331 | 1.00 | 25.61 | 1DIK1488 |
| ATOM | 1397 | ND2 | ASN | 185 | -3.174 | 13.421 | 26.543 | 1.00 | 23.70 | 1DIK1489 |
| ATOM | 1398 | N   | THR | 186 | -0.089 | 12.962 | 27.350 | 1.00 | 18.02 | 1DIK1490 |
| ATOM | 1399 | CA  | THR | 186 | 0.809  | 14.116 | 27.383 | 1.00 | 19.61 | 1DIK1491 |
| ATOM | 1400 | C   | THR | 186 | 0.117  | 15.452 | 27.104 | 1.00 | 23.05 | 1DIK1492 |
| ATOM | 1401 | O   | THR | 186 | 0.619  | 16.513 | 27.477 | 1.00 | 24.23 | 1DIK1493 |
| ATOM | 1402 | CB  | THR | 186 | 1.959  | 13.971 | 26.367 | 1.00 | 20.27 | 1DIK1494 |
| ATOM | 1403 | OG1 | THR | 186 | 1.410  | 13.772 | 25.062 | 1.00 | 19.57 | 1DIK1495 |
| ATOM | 1404 | CG2 | THR | 186 | 2.871  | 12.815 | 26.731 | 1.00 | 15.78 | 1DIK1496 |
| ATOM | 1405 | N   | LEU | 187 | -1.030 | 15.398 | 26.443 | 1.00 | 22.21 | 1DIK1497 |
| ATOM | 1406 | CA  | LEU | 187 | -1.772 | 16.597 | 26.092 | 1.00 | 21.72 | 1DIK1498 |
| ATOM | 1407 | C   | LEU | 187 | -2.549 | 17.208 | 27.259 | 1.00 | 23.64 | 1DIK1499 |
| ATOM | 1408 | O   | LEU | 187 | -2.797 | 18.410 | 27.282 | 1.00 | 22.02 | 1DIK1500 |
| ATOM | 1409 | CB  | LEU | 187 | -2.716 | 16.276 | 24.933 | 1.00 | 23.09 | 1DIK1501 |
| ATOM | 1410 | CG  | LEU | 187 | -2.063 | 15.798 | 23.623 | 1.00 | 23.80 | 1DIK1502 |
| ATOM | 1411 | CD1 | LEU | 187 | -3.140 | 15.295 | 22.673 | 1.00 | 19.98 | 1DIK1503 |
| ATOM | 1412 | CD2 | LEU | 187 | -1.262 | 16.926 | 22.984 | 1.00 | 19.12 | 1DIK1504 |
| ATOM | 1413 | N   | ASP | 188 | -2.934 | 16.376 | 28.218 | 1.00 | 24.87 | 1DIK1505 |
| ATOM | 1414 | CA  | ASP | 188 | -3.684 | 16.815 | 29.399 | 1.00 | 28.75 | 1DIK1506 |
| ATOM | 1415 | C   | ASP | 188 | -3.540 | 15.688 | 30.424 | 1.00 | 27.51 | 1DIK1507 |
| ATOM | 1416 | O   | ASP | 188 | -4.431 | 14.851 | 30.584 | 1.00 | 30.17 | 1DIK1508 |
| ATOM | 1417 | CB  | ASP | 188 | -5.165 | 17.042 | 29.041 | 1.00 | 34.58 | 1DIK1509 |
| ATOM | 1418 | CG  | ASP | 188 | -5.958 | 17.724 | 30.171 | 1.00 | 41.42 | 1DIK1510 |
| ATOM | 1419 | OD1 | ASP | 188 | -5.474 | 18.727 | 30.765 | 1.00 | 42.84 | 1DIK1511 |
| ATOM | 1420 | OD2 | ASP | 188 | -7.079 | 17.246 | 30.461 | 1.00 | 42.36 | 1DIK1512 |
| ATOM | 1421 | N   | PRO | 189 | -2.398 | 15.653 | 31.129 | 1.00 | 26.10 | 1DIK1513 |
| ATOM | 1422 | CA  | PRO | 189 | -2.107 | 14.622 | 32.137 | 1.00 | 25.17 | 1DIK1514 |
| ATOM | 1423 | C   | PRO | 189 | -3.063 | 14.609 | 33.322 | 1.00 | 26.14 | 1DIK1515 |
| ATOM | 1424 | O   | PRO | 189 | -3.442 | 15.671 | 33.825 | 1.00 | 27.85 | 1DIK1516 |
| ATOM | 1425 | CB  | PRO | 189 | -0.677 | 14.959 | 32.579 | 1.00 | 21.04 | 1DIK1517 |
| ATOM | 1426 | CG  | PRO | 189 | -0.113 | 15.765 | 31.425 | 1.00 | 21.36 | 1DIK1518 |
| ATOM | 1427 | CD  | PRO | 189 | -1.286 | 16.615 | 31.026 | 1.00 | 22.23 | 1DIK1519 |
| ATOM | 1428 | N   | GLY | 190 | -3.442 | 13.413 | 33.766 | 1.00 | 24.92 | 1DIK1520 |
| ATOM | 1429 | CA  | GLY | 190 | -4.325 | 13.296 | 34.910 | 1.00 | 24.73 | 1DIK1521 |
| ATOM | 1430 | C   | GLY | 190 | -3.783 | 12.314 | 35.934 | 1.00 | 29.33 | 1DIK1522 |
| ATOM | 1431 | O   | GLY | 190 | -4.457 | 12.016 | 36.917 | 1.00 | 32.88 | 1DIK1523 |
| ATOM | 1432 | N   | THR | 191 | -2.563 | 11.824 | 35.722 | 1.00 | 26.97 | 1DIK1524 |
| ATOM | 1433 | CA  | THR | 191 | -1.964 | 10.826 | 36.603 | 1.00 | 26.69 | 1DIK1525 |
| ATOM | 1434 | C   | THR | 191 | -1.040 | 11.316 | 37.725 | 1.00 | 30.17 | 1DIK1526 |
| ATOM | 1435 | O   | THR | 191 | -0.535 | 10.507 | 38.518 | 1.00 | 32.24 | 1DIK1527 |
| ATOM | 1436 | CB  | THR | 191 | -1.202 | 9.781  | 35.776 | 1.00 | 25.25 | 1DIK1528 |
| ATOM | 1437 | OG1 | THR | 191 | -0.258 | 10.449 | 34.927 | 1.00 | 25.22 | 1DIK1529 |
| ATOM | 1438 | CG2 | THR | 191 | -2.170 | 8.967  | 34.918 | 1.00 | 24.37 | 1DIK1530 |
| ATOM | 1439 | N   | CYS | 192 | -0.805 | 12.621 | 37.800 | 1.00 | 29.82 | 1DIK1531 |
| ATOM | 1440 | CA  | CYS | 192 | 0.055  | 13.164 | 38.847 | 1.00 | 29.63 | 1DIK1532 |

FIG. 8-23

|      |      |     |     |     |        |        |        |      |       |           |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|-----------|
| ATOM | 1441 | C   | CYS | 192 | -0.783 | 13.395 | 40.101 | 1.00 | 29.84 | 1DIK 1533 |
| ATOM | 1442 | O   | CYS | 192 | -1.282 | 14.507 | 40.330 | 1.00 | 26.80 | 1DIK 1534 |
| ATOM | 1443 | CB  | CYS | 192 | 0.699  | 14.466 | 38.387 | 1.00 | 28.28 | 1DIK 1535 |
| ATOM | 1444 | SG  | CYS | 192 | 1.766  | 15.227 | 39.646 | 1.00 | 30.95 | 1DIK 1536 |
| ATOM | 1445 | N   | THR | 193 | -0.924 | 12.333 | 40.900 | 1.00 | 31.00 | 1DIK 1537 |
| ATOM | 1446 | CA  | THR | 193 | -1.719 | 12.331 | 42.134 | 1.00 | 30.54 | 1DIK 1538 |
| ATOM | 1447 | C   | THR | 193 | -1.679 | 13.595 | 42.998 | 1.00 | 28.74 | 1DIK 1539 |
| ATOM | 1448 | O   | THR | 193 | -2.718 | 14.231 | 43.213 | 1.00 | 26.01 | 1DIK 1540 |
| ATOM | 1449 | CB  | THR | 193 | -1.371 | 11.117 | 43.018 | 1.00 | 34.12 | 1DIK 1541 |
| ATOM | 1450 | OG1 | THR | 193 | -1.408 | 9.919  | 42.231 | 1.00 | 39.67 | 1DIK 1542 |
| ATOM | 1451 | CG2 | THR | 193 | -2.386 | 10.976 | 44.130 | 1.00 | 35.19 | 1DIK 1543 |
| ATOM | 1452 | N   | VAL | 194 | -0.503 | 13.969 | 43.489 | 1.00 | 27.22 | 1DIK 1544 |
| ATOM | 1453 | CA  | VAL | 194 | -0.415 | 15.157 | 44.323 | 1.00 | 30.44 | 1DIK 1545 |
| ATOM | 1454 | C   | VAL | 194 | -0.953 | 16.406 | 43.614 | 1.00 | 33.87 | 1DIK 1546 |
| ATOM | 1455 | O   | VAL | 194 | -1.705 | 17.178 | 44.211 | 1.00 | 37.21 | 1DIK 1547 |
| ATOM | 1456 | CB  | VAL | 194 | 1.022  | 15.387 | 44.829 | 1.00 | 31.50 | 1DIK 1548 |
| ATOM | 1457 | CG1 | VAL | 194 | 1.175  | 16.793 | 45.390 | 1.00 | 27.45 | 1DIK 1549 |
| ATOM | 1458 | CG2 | VAL | 194 | 1.339  | 14.382 | 45.914 | 1.00 | 26.96 | 1DIK 1550 |
| ATOM | 1459 | N   | PHE | 195 | -0.587 | 16.600 | 42.349 | 1.00 | 33.70 | 1DIK 1551 |
| ATOM | 1460 | CA  | PHE | 195 | -1.049 | 17.768 | 41.598 | 1.00 | 32.23 | 1DIK 1552 |
| ATOM | 1461 | C   | PHE | 195 | -2.575 | 17.802 | 41.485 | 1.00 | 33.46 | 1DIK 1553 |
| ATOM | 1462 | O   | PHE | 195 | -3.195 | 18.853 | 41.665 | 1.00 | 34.15 | 1DIK 1554 |
| ATOM | 1463 | CB  | PHE | 195 | -0.429 | 17.803 | 40.192 | 1.00 | 28.54 | 1DIK 1555 |
| ATOM | 1464 | CG  | PHE | 195 | -0.987 | 18.890 | 39.311 | 1.00 | 24.30 | 1DIK 1556 |
| ATOM | 1465 | CD1 | PHE | 195 | -0.563 | 20.207 | 39.457 | 1.00 | 21.84 | 1DIK 1557 |
| ATOM | 1466 | CD2 | PHE | 195 | -1.952 | 18.595 | 38.344 | 1.00 | 22.84 | 1DIK 1558 |
| ATOM | 1467 | CE1 | PHE | 195 | -1.087 | 21.237 | 38.650 | 1.00 | 28.26 | 1DIK 1559 |
| ATOM | 1468 | CE2 | PHE | 195 | -2.486 | 19.610 | 37.529 | 1.00 | 26.40 | 1DIK 1560 |
| ATOM | 1469 | CZ  | PHE | 195 | -2.051 | 20.940 | 37.684 | 1.00 | 23.76 | 1DIK 1561 |
| ATOM | 1470 | N   | GLU | 196 | -3.174 | 16.656 | 41.188 | 1.00 | 33.59 | 1DIK 1562 |
| ATOM | 1471 | CA  | GLU | 196 | -4.618 | 16.574 | 41.048 | 1.00 | 34.08 | 1DIK 1563 |
| ATOM | 1472 | C   | GLU | 196 | -5.357 | 16.966 | 42.328 | 1.00 | 35.44 | 1DIK 1564 |
| ATOM | 1473 | O   | GLU | 196 | -6.497 | 17.411 | 42.266 | 1.00 | 35.61 | 1DIK 1565 |
| ATOM | 1474 | CB  | GLU | 196 | -5.026 | 15.165 | 40.602 | 1.00 | 34.98 | 1DIK 1566 |
| ATOM | 1475 | CG  | GLU | 196 | -4.509 | 14.774 | 39.211 | 1.00 | 37.27 | 1DIK 1567 |
| ATOM | 1476 | CD  | GLU | 196 | -5.098 | 15.638 | 38.094 | 1.00 | 40.35 | 1DIK 1568 |
| ATOM | 1477 | OE1 | GLU | 196 | -6.338 | 15.806 | 38.053 | 1.00 | 45.20 | 1DIK 1569 |
| ATOM | 1478 | OE2 | GLU | 196 | -4.332 | 16.154 | 37.256 | 1.00 | 33.72 | 1DIK 1570 |
| ATOM | 1479 | N   | ASP | 197 | -4.715 | 16.807 | 43.483 | 1.00 | 38.29 | 1DIK 1571 |
| ATOM | 1480 | CA  | ASP | 197 | -5.352 | 17.160 | 44.758 | 1.00 | 40.02 | 1DIK 1572 |
| ATOM | 1481 | C   | ASP | 197 | -5.141 | 18.621 | 45.173 | 1.00 | 38.28 | 1DIK 1573 |
| ATOM | 1482 | O   | ASP | 197 | -5.770 | 19.093 | 46.110 | 1.00 | 38.49 | 1DIK 1574 |
| ATOM | 1483 | CB  | ASP | 197 | -4.862 | 16.234 | 45.887 | 1.00 | 43.17 | 1DIK 1575 |
| ATOM | 1484 | CG  | ASP | 197 | -5.402 | 14.805 | 45.766 | 1.00 | 48.76 | 1DIK 1576 |
| ATOM | 1485 | OD1 | ASP | 197 | -6.582 | 14.630 | 45.373 | 1.00 | 50.32 | 1DIK 1577 |
| ATOM | 1486 | OD2 | ASP | 197 | -4.640 | 13.853 | 46.069 | 1.00 | 49.19 | 1DIK 1578 |
| ATOM | 1487 | N   | SER | 198 | -4.261 | 19.327 | 44.470 | 1.00 | 38.44 | 1DIK 1579 |
| ATOM | 1488 | CA  | SER | 198 | -3.928 | 20.724 | 44.763 | 1.00 | 38.19 | 1DIK 1580 |
| ATOM | 1489 | C   | SER | 198 | -5.131 | 21.675 | 44.824 | 1.00 | 39.35 | 1DIK 1581 |
| ATOM | 1490 | O   | SER | 198 | -6.001 | 21.639 | 43.952 | 1.00 | 38.20 | 1DIK 1582 |
| ATOM | 1491 | CB  | SER | 198 | -2.929 | 21.231 | 43.713 | 1.00 | 34.00 | 1DIK 1583 |
| ATOM | 1492 | OG  | SER | 198 | -2.404 | 22.508 | 44.049 | 1.00 | 37.33 | 1DIK 1584 |
| ATOM | 1493 | N   | GLU | 199 | -5.175 | 22.530 | 45.848 | 1.00 | 40.37 | 1DIK 1585 |
| ATOM | 1494 | CA  | GLU | 199 | -6.262 | 23.505 | 45.981 | 1.00 | 42.79 | 1DIK 1586 |
| ATOM | 1495 | C   | GLU | 199 | -5.735 | 24.932 | 45.904 | 1.00 | 41.90 | 1DIK 1587 |
| ATOM | 1496 | O   | GLU | 199 | -6.453 | 25.886 | 46.228 | 1.00 | 41.14 | 1DIK 1588 |
| ATOM | 1497 | CB  | GLU | 199 | -7.010 | 23.322 | 47.295 | 1.00 | 47.81 | 1DIK 1589 |
| ATOM | 1498 | CG  | GLU | 199 | -7.935 | 22.127 | 47.334 | 1.00 | 56.13 | 1DIK 1590 |
| ATOM | 1499 | CD  | GLU | 199 | -8.400 | 21.817 | 48.752 | 1.00 | 62.12 | 1DIK 1591 |
| ATOM | 1500 | OE1 | GLU | 199 | -7.533 | 21.713 | 49.663 | 1.00 | 60.51 | 1DIK 1592 |
| ATOM | 1501 | OE2 | GLU | 199 | -9.631 | 21.680 | 48.952 | 1.00 | 64.72 | 1DIK 1593 |
| ATOM | 1502 | N   | LEU | 200 | -4.485 | 25.079 | 45.465 | 1.00 | 39.80 | 1DIK 1594 |
| ATOM | 1503 | CA  | LEU | 200 | -3.861 | 26.391 | 45.356 | 1.00 | 38.33 | 1DIK 1595 |
| ATOM | 1504 | C   | LEU | 200 | -4.700 | 27.405 | 44.565 | 1.00 | 40.30 | 1DIK 1596 |
| ATOM | 1505 | O   | LEU | 200 | -4.924 | 28.526 | 45.027 | 1.00 | 41.57 | 1DIK 1597 |
| ATOM | 1506 | CB  | LEU | 200 | -2.469 | 26.260 | 44.740 | 1.00 | 34.44 | 1DIK 1598 |

FIG. 8-24



|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1507 | CG  | LEU | 200 | -1.659  | 27.564 | 44.728 | 1.00 | 38.04 | 1DIK1599 |
| ATOM | 1508 | CD1 | LEU | 200 | -1.503  | 28.104 | 46.144 | 1.00 | 29.88 | 1DIK1600 |
| ATOM | 1509 | CD2 | LEU | 200 | -0.297  | 27.334 | 44.087 | 1.00 | 36.27 | 1DIK1601 |
| ATOM | 1510 | N   | ALA | 201 | -5.170  | 27.012 | 43.384 | 1.00 | 39.72 | 1DIK1602 |
| ATOM | 1511 | CA  | ALA | 201 | -5.974  | 27.901 | 42.549 | 1.00 | 38.07 | 1DIK1603 |
| ATOM | 1512 | C   | ALA | 201 | -7.230  | 28.400 | 43.247 | 1.00 | 39.57 | 1DIK1604 |
| ATOM | 1513 | O   | ALA | 201 | -7.623  | 29.541 | 43.048 | 1.00 | 41.56 | 1DIK1605 |
| ATOM | 1514 | CB  | ALA | 201 | -6.354  | 27.211 | 41.249 | 1.00 | 33.45 | 1DIK1606 |
| ATOM | 1515 | N   | ASP | 202 | -7.863  | 27.557 | 44.060 | 1.00 | 42.79 | 1DIK1607 |
| ATOM | 1516 | CA  | ASP | 202 | -9.089  | 27.949 | 44.767 | 1.00 | 46.09 | 1DIK1608 |
| ATOM | 1517 | C   | ASP | 202 | -8.812  | 29.026 | 45.804 | 1.00 | 46.30 | 1DIK1609 |
| ATOM | 1518 | O   | ASP | 202 | -9.596  | 29.968 | 45.962 | 1.00 | 48.14 | 1DIK1610 |
| ATOM | 1519 | CB  | ASP | 202 | -9.719  | 26.748 | 45.461 | 1.00 | 52.71 | 1DIK1611 |
| ATOM | 1520 | CG  | ASP | 202 | -10.027 | 25.624 | 44.503 | 1.00 | 62.26 | 1DIK1612 |
| ATOM | 1521 | OD1 | ASP | 202 | -10.673 | 25.892 | 43.457 | 1.00 | 62.64 | 1DIK1613 |
| ATOM | 1522 | OD2 | ASP | 202 | -9.617  | 24.476 | 44.804 | 1.00 | 68.25 | 1DIK1614 |
| ATOM | 1523 | N   | THR | 203 | -7.693  | 28.875 | 46.507 | 1.00 | 42.43 | 1DIK1615 |
| ATOM | 1524 | CA  | THR | 203 | -7.283  | 29.828 | 47.524 | 1.00 | 40.28 | 1DIK1616 |
| ATOM | 1525 | C   | THR | 203 | -7.020  | 31.183 | 46.875 | 1.00 | 38.82 | 1DIK1617 |
| ATOM | 1526 | O   | THR | 203 | -7.475  | 32.212 | 47.370 | 1.00 | 40.38 | 1DIK1618 |
| ATOM | 1527 | CB  | THR | 203 | -6.010  | 29.334 | 48.243 | 1.00 | 41.33 | 1DIK1619 |
| ATOM | 1528 | OG1 | THR | 203 | -6.318  | 28.139 | 48.976 | 1.00 | 42.61 | 1DIK1620 |
| ATOM | 1529 | CG2 | THR | 203 | -5.469  | 30.397 | 49.192 | 1.00 | 37.55 | 1DIK1621 |
| ATOM | 1530 | N   | VAL | 204 | -6.291  | 31.170 | 45.762 | 1.00 | 37.98 | 1DIK1622 |
| ATOM | 1531 | CA  | VAL | 204 | -5.953  | 32.386 | 45.021 | 1.00 | 36.13 | 1DIK1623 |
| ATOM | 1532 | C   | VAL | 204 | -7.209  | 33.048 | 44.454 | 1.00 | 34.77 | 1DIK1624 |
| ATOM | 1533 | O   | VAL | 204 | -7.372  | 34.265 | 44.544 | 1.00 | 35.20 | 1DIK1625 |
| ATOM | 1534 | CB  | VAL | 204 | -4.939  | 32.070 | 43.888 | 1.00 | 36.51 | 1DIK1626 |
| ATOM | 1535 | CG1 | VAL | 204 | -4.675  | 33.291 | 43.036 | 1.00 | 33.64 | 1DIK1627 |
| ATOM | 1536 | CG2 | VAL | 204 | -3.638  | 31.577 | 44.496 | 1.00 | 30.96 | 1DIK1628 |
| ATOM | 1537 | N   | GLU | 205 | -8.101  | 32.248 | 43.885 | 1.00 | 34.36 | 1DIK1629 |
| ATOM | 1538 | CA  | GLU | 205 | -9.343  | 32.778 | 43.331 | 1.00 | 36.22 | 1DIK1630 |
| ATOM | 1539 | C   | GLU | 205 | -10.125 | 33.501 | 44.414 | 1.00 | 36.92 | 1DIK1631 |
| ATOM | 1540 | O   | GLU | 205 | -10.662 | 34.580 | 44.182 | 1.00 | 40.62 | 1DIK1632 |
| ATOM | 1541 | CB  | GLU | 205 | -10.201 | 31.655 | 42.750 | 1.00 | 33.02 | 1DIK1633 |
| ATOM | 1542 | CG  | GLU | 205 | -11.607 | 32.094 | 42.365 | 1.00 | 39.52 | 1DIK1634 |
| ATOM | 1543 | CD  | GLU | 205 | -12.312 | 31.094 | 41.454 | 1.00 | 46.03 | 1DIK1635 |
| ATOM | 1544 | OE1 | GLU | 205 | -12.076 | 29.875 | 41.597 | 1.00 | 48.84 | 1DIK1636 |
| ATOM | 1545 | OE2 | GLU | 205 | -13.105 | 31.526 | 40.585 | 1.00 | 53.38 | 1DIK1637 |
| ATOM | 1546 | N   | ALA | 206 | -10.179 | 32.897 | 45.597 | 1.00 | 39.03 | 1DIK1638 |
| ATOM | 1547 | CA  | ALA | 206 | -10.898 | 33.464 | 46.731 | 1.00 | 37.04 | 1DIK1639 |
| ATOM | 1548 | C   | ALA | 206 | -10.262 | 34.787 | 47.160 | 1.00 | 36.03 | 1DIK1640 |
| ATOM | 1549 | O   | ALA | 206 | -10.954 | 35.803 | 47.316 | 1.00 | 32.23 | 1DIK1641 |
| ATOM | 1550 | CB  | ALA | 206 | -10.909 | 32.472 | 47.891 | 1.00 | 32.31 | 1DIK1642 |
| ATOM | 1551 | N   | ASN | 207 | -8.946  | 34.774 | 47.335 | 1.00 | 35.44 | 1DIK1643 |
| ATOM | 1552 | CA  | ASN | 207 | -8.231  | 35.971 | 47.754 | 1.00 | 40.04 | 1DIK1644 |
| ATOM | 1553 | C   | ASN | 207 | -8.484  | 37.150 | 46.836 | 1.00 | 39.71 | 1DIK1645 |
| ATOM | 1554 | O   | ASN | 207 | -8.838  | 38.235 | 47.307 | 1.00 | 42.35 | 1DIK1646 |
| ATOM | 1555 | CB  | ASN | 207 | -6.716  | 35.722 | 47.841 | 1.00 | 43.98 | 1DIK1647 |
| ATOM | 1556 | CG  | ASN | 207 | -6.331  | 34.791 | 48.992 | 1.00 | 48.43 | 1DIK1648 |
| ATOM | 1557 | OD1 | ASN | 207 | -7.115  | 34.557 | 49.922 | 1.00 | 46.90 | 1DIK1649 |
| ATOM | 1558 | ND2 | ASN | 207 | -5.111  | 34.252 | 48.930 | 1.00 | 50.65 | 1DIK1650 |
| ATOM | 1559 | N   | PHE | 208 | -8.318  | 36.946 | 45.531 | 1.00 | 37.95 | 1DIK1651 |
| ATOM | 1560 | CA  | PHE | 208 | -8.499  | 38.044 | 44.591 | 1.00 | 34.08 | 1DIK1652 |
| ATOM | 1561 | C   | PHE | 208 | -9.925  | 38.528 | 44.400 | 1.00 | 32.61 | 1DIK1653 |
| ATOM | 1562 | O   | PHE | 208 | -10.156 | 39.739 | 44.401 | 1.00 | 32.67 | 1DIK1654 |
| ATOM | 1563 | CB  | PHE | 208 | -7.878  | 37.726 | 43.229 | 1.00 | 32.46 | 1DIK1655 |
| ATOM | 1564 | CG  | PHE | 208 | -7.841  | 38.915 | 42.287 | 1.00 | 32.48 | 1DIK1656 |
| ATOM | 1565 | CD1 | PHE | 208 | -6.951  | 39.966 | 42.506 | 1.00 | 30.74 | 1DIK1657 |
| ATOM | 1566 | CD2 | PHE | 208 | -8.713  | 38.991 | 41.193 | 1.00 | 28.48 | 1DIK1658 |
| ATOM | 1567 | CE1 | PHE | 208 | -6.929  | 41.081 | 41.650 | 1.00 | 29.80 | 1DIK1659 |
| ATOM | 1568 | CE2 | PHE | 208 | -8.700  | 40.090 | 40.339 | 1.00 | 26.94 | 1DIK1660 |
| ATOM | 1569 | CZ  | PHE | 208 | -7.805  | 41.140 | 40.568 | 1.00 | 30.80 | 1DIK1661 |
| ATOM | 1570 | N   | THR | 209 | -10.887 | 37.620 | 44.238 | 1.00 | 31.39 | 1DIK1662 |
| ATOM | 1571 | CA  | THR | 209 | -12.259 | 38.074 | 44.026 | 1.00 | 33.60 | 1DIK1663 |
| ATOM | 1572 | C   | THR | 209 | -12.678 | 38.987 | 45.171 | 1.00 | 34.71 | 1DIK1664 |



|      |      |     |     |     |         |        |        |      |       |           |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|-----------|
| ATOM | 1573 | O   | THR | 209 | -13.415 | 39.954 | 44.963 | 1.00 | 36.94 | 1DIK 1665 |
| ATOM | 1574 | CB  | THR | 209 | -13.280 | 36.904 | 43.844 | 1.00 | 32.70 | 1DIK 1666 |
| ATOM | 1575 | OG1 | THR | 209 | -13.295 | 36.072 | 45.004 | 1.00 | 36.54 | 1DIK 1667 |
| ATOM | 1576 | CG2 | THR | 209 | -12.919 | 36.057 | 42.631 | 1.00 | 31.98 | 1DIK 1668 |
| ATOM | 1577 | N   | ALA | 210 | -12.193 | 38.693 | 46.376 | 1.00 | 37.10 | 1DIK 1669 |
| ATOM | 1578 | CA  | ALA | 210 | -12.504 | 39.505 | 47.557 | 1.00 | 37.69 | 1DIK 1670 |
| ATOM | 1579 | C   | ALA | 210 | -12.126 | 40.977 | 47.342 | 1.00 | 39.15 | 1DIK 1671 |
| ATOM | 1580 | O   | ALA | 210 | -12.801 | 41.876 | 47.849 | 1.00 | 42.92 | 1DIK 1672 |
| ATOM | 1581 | CB  | ALA | 210 | -11.781 | 38.954 | 48.770 | 1.00 | 31.71 | 1DIK 1673 |
| ATOM | 1582 | N   | THR | 211 | -11.067 | 41.222 | 46.576 | 1.00 | 36.88 | 1DIK 1674 |
| ATOM | 1583 | CA  | THR | 211 | -10.610 | 42.581 | 46.310 | 1.00 | 36.47 | 1DIK 1675 |
| ATOM | 1584 | C   | THR | 211 | -11.462 | 43.431 | 45.341 | 1.00 | 35.57 | 1DIK 1676 |
| ATOM | 1585 | O   | THR | 211 | -11.188 | 44.629 | 45.192 | 1.00 | 37.01 | 1DIK 1677 |
| ATOM | 1586 | CB  | THR | 211 | -9.170  | 42.583 | 45.769 | 1.00 | 37.77 | 1DIK 1678 |
| ATOM | 1587 | OG1 | THR | 211 | -9.190  | 42.206 | 44.388 | 1.00 | 40.97 | 1DIK 1679 |
| ATOM | 1588 | CG2 | THR | 211 | -8.297  | 41.590 | 46.537 | 1.00 | 35.34 | 1DIK 1680 |
| ATOM | 1589 | N   | PHE | 212 | -12.473 | 42.858 | 44.683 | 1.00 | 29.14 | 1DIK 1681 |
| ATOM | 1590 | CA  | PHE | 212 | -13.280 | 43.659 | 43.749 | 1.00 | 24.90 | 1DIK 1682 |
| ATOM | 1591 | C   | PHE | 212 | -14.736 | 43.224 | 43.559 | 1.00 | 27.12 | 1DIK 1683 |
| ATOM | 1592 | O   | PHE | 212 | -15.577 | 44.041 | 43.190 | 1.00 | 31.27 | 1DIK 1684 |
| ATOM | 1593 | CB  | PHE | 212 | -12.583 | 43.755 | 42.371 | 1.00 | 25.16 | 1DIK 1685 |
| ATOM | 1594 | CG  | PHE | 212 | -12.772 | 42.534 | 41.491 | 1.00 | 26.99 | 1DIK 1686 |
| ATOM | 1595 | CD1 | PHE | 212 | -12.017 | 41.382 | 41.689 | 1.00 | 24.61 | 1DIK 1687 |
| ATOM | 1596 | CD2 | PHE | 212 | -13.724 | 42.538 | 40.469 | 1.00 | 29.36 | 1DIK 1688 |
| ATOM | 1597 | CE1 | PHE | 212 | -12.213 | 40.252 | 40.883 | 1.00 | 26.98 | 1DIK 1689 |
| ATOM | 1598 | CE2 | PHE | 212 | -13.926 | 41.417 | 39.661 | 1.00 | 23.41 | 1DIK 1690 |
| ATOM | 1599 | CZ  | PHE | 212 | -13.170 | 40.273 | 39.869 | 1.00 | 24.28 | 1DIK 1691 |
| ATOM | 1600 | N   | VAL | 213 | -15.045 | 41.954 | 43.798 | 1.00 | 26.22 | 1DIK 1692 |
| ATOM | 1601 | CA  | VAL | 213 | -16.414 | 41.458 | 43.637 | 1.00 | 26.85 | 1DIK 1693 |
| ATOM | 1602 | C   | VAL | 213 | -17.424 | 41.996 | 44.676 | 1.00 | 31.61 | 1DIK 1694 |
| ATOM | 1603 | O   | VAL | 213 | -18.554 | 42.341 | 44.322 | 1.00 | 30.84 | 1DIK 1695 |
| ATOM | 1604 | CB  | VAL | 213 | -16.449 | 39.905 | 43.611 | 1.00 | 22.75 | 1DIK 1696 |
| ATOM | 1605 | CG1 | VAL | 213 | -17.854 | 39.405 | 43.418 | 1.00 | 16.76 | 1DIK 1697 |
| ATOM | 1606 | CG2 | VAL | 213 | -15.592 | 39.403 | 42.489 | 1.00 | 20.78 | 1DIK 1698 |
| ATOM | 1607 | N   | PRO | 214 | -17.041 | 42.076 | 45.966 | 1.00 | 33.45 | 1DIK 1699 |
| ATOM | 1608 | CA  | PRO | 214 | -17.969 | 42.585 | 46.989 | 1.00 | 33.40 | 1DIK 1700 |
| ATOM | 1609 | C   | PRO | 214 | -18.707 | 43.889 | 46.624 | 1.00 | 31.74 | 1DIK 1701 |
| ATOM | 1610 | O   | PRO | 214 | -19.922 | 43.978 | 46.813 | 1.00 | 34.40 | 1DIK 1702 |
| ATOM | 1611 | CB  | PRO | 214 | -17.067 | 42.749 | 48.207 | 1.00 | 36.14 | 1DIK 1703 |
| ATOM | 1612 | CG  | PRO | 214 | -16.114 | 41.600 | 48.040 | 1.00 | 37.34 | 1DIK 1704 |
| ATOM | 1613 | CD  | PRO | 214 | -15.753 | 41.702 | 46.578 | 1.00 | 34.24 | 1DIK 1705 |
| ATOM | 1614 | N   | SER | 215 | -17.992 | 44.887 | 46.103 | 1.00 | 29.66 | 1DIK 1706 |
| ATOM | 1615 | CA  | SER | 215 | -18.619 | 46.154 | 45.698 | 1.00 | 31.11 | 1DIK 1707 |
| ATOM | 1616 | C   | SER | 215 | -19.661 | 45.910 | 44.615 | 1.00 | 30.62 | 1DIK 1708 |
| ATOM | 1617 | O   | SER | 215 | -20.767 | 46.451 | 44.671 | 1.00 | 29.20 | 1DIK 1709 |
| ATOM | 1618 | CB  | SER | 215 | -17.584 | 47.123 | 45.136 | 1.00 | 33.71 | 1DIK 1710 |
| ATOM | 1619 | OG  | SER | 215 | -16.463 | 47.219 | 45.991 | 1.00 | 47.07 | 1DIK 1711 |
| ATOM | 1620 | N   | ILE | 216 | -19.297 | 45.093 | 43.627 | 1.00 | 29.96 | 1DIK 1712 |
| ATOM | 1621 | CA  | ILE | 216 | -20.199 | 44.757 | 42.529 | 1.00 | 27.85 | 1DIK 1713 |
| ATOM | 1622 | C   | ILE | 216 | -21.446 | 44.086 | 43.104 | 1.00 | 29.12 | 1DIK 1714 |
| ATOM | 1623 | O   | ILE | 216 | -22.578 | 44.429 | 42.734 | 1.00 | 28.40 | 1DIK 1715 |
| ATOM | 1624 | CB  | ILE | 216 | -19.532 | 43.797 | 41.512 | 1.00 | 24.43 | 1DIK 1716 |
| ATOM | 1625 | CG1 | ILE | 216 | -18.194 | 44.372 | 41.032 | 1.00 | 25.18 | 1DIK 1717 |
| ATOM | 1626 | CG2 | ILE | 216 | -20.446 | 43.596 | 40.334 | 1.00 | 24.08 | 1DIK 1718 |
| ATOM | 1627 | CD1 | ILE | 216 | -17.423 | 43.463 | 40.073 | 1.00 | 19.59 | 1DIK 1719 |
| ATOM | 1628 | N   | ARG | 217 | -21.231 | 43.136 | 44.016 | 1.00 | 32.27 | 1DIK 1720 |
| ATOM | 1629 | CA  | ARG | 217 | -22.326 | 42.415 | 44.661 | 1.00 | 33.05 | 1DIK 1721 |
| ATOM | 1630 | C   | ARG | 217 | -23.283 | 43.390 | 45.348 | 1.00 | 34.41 | 1DIK 1722 |
| ATOM | 1631 | O   | ARG | 217 | -24.508 | 43.263 | 45.220 | 1.00 | 34.77 | 1DIK 1723 |
| ATOM | 1632 | CB  | ARG | 217 | -21.798 | 41.415 | 45.689 | 1.00 | 32.26 | 1DIK 1724 |
| ATOM | 1633 | CG  | ARG | 217 | -22.910 | 40.737 | 46.468 | 1.00 | 28.72 | 1DIK 1725 |
| ATOM | 1634 | CD  | ARG | 217 | -22.379 | 39.772 | 47.495 | 1.00 | 33.69 | 1DIK 1726 |
| ATOM | 1635 | NE  | ARG | 217 | -21.418 | 40.352 | 48.438 | 1.00 | 37.21 | 1DIK 1727 |
| ATOM | 1636 | CZ  | ARG | 217 | -21.677 | 41.336 | 49.303 | 1.00 | 38.84 | 1DIK 1728 |
| ATOM | 1637 | NH1 | ARG | 217 | -22.879 | 41.908 | 49.355 | 1.00 | 34.37 | 1DIK 1729 |
| ATOM | 1638 | NH2 | ARG | 217 | -20.713 | 41.754 | 50.120 | 1.00 | 35.90 | 1DIK 1730 |

FIG. 8-26

In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1639 | N   | GLN | 218 | -22.729 | 44.359 | 46.073 | 1.00 | 32.95 | 1DIK1731 |
| ATOM | 1640 | CA  | GLN | 218 | -23.562 | 45.352 | 46.749 | 1.00 | 36.19 | 1DIK1732 |
| ATOM | 1641 | C   | GLN | 218 | -24.392 | 46.172 | 45.763 | 1.00 | 36.45 | 1DIK1733 |
| ATOM | 1642 | O   | GLN | 218 | -25.565 | 46.450 | 46.026 | 1.00 | 36.62 | 1DIK1734 |
| ATOM | 1643 | CB  | GLN | 218 | -22.715 | 46.275 | 47.617 | 1.00 | 37.01 | 1DIK1735 |
| ATOM | 1644 | CG  | GLN | 218 | -22.118 | 45.574 | 48.819 | 1.00 | 42.03 | 1DIK1736 |
| ATOM | 1645 | CD  | GLN | 218 | -21.371 | 46.519 | 49.727 | 1.00 | 44.82 | 1DIK1737 |
| ATOM | 1646 | OE1 | GLN | 218 | -21.019 | 47.631 | 49.335 | 1.00 | 47.97 | 1DIK1738 |
| ATOM | 1647 | NE2 | GLN | 218 | -21.123 | 46.083 | 50.955 | 1.00 | 49.64 | 1DIK1739 |
| ATOM | 1648 | N   | ARG | 219 | -23.799 | 46.548 | 44.629 | 1.00 | 34.39 | 1DIK1740 |
| ATOM | 1649 | CA  | ARG | 219 | -24.529 | 47.313 | 43.624 | 1.00 | 31.62 | 1DIK1741 |
| ATOM | 1650 | C   | ARG | 219 | -25.691 | 46.487 | 43.091 | 1.00 | 33.49 | 1DIK1742 |
| ATOM | 1651 | O   | ARG | 219 | -26.813 | 46.984 | 42.982 | 1.00 | 34.34 | 1DIK1743 |
| ATOM | 1652 | CB  | ARG | 219 | -23.618 | 47.722 | 42.470 | 1.00 | 29.81 | 1DIK1744 |
| ATOM | 1653 | CG  | ARG | 219 | -24.290 | 48.626 | 41.446 | 1.00 | 27.77 | 1DIK1745 |
| ATOM | 1654 | CD  | ARG | 219 | -23.291 | 49.121 | 40.410 | 1.00 | 28.23 | 1DIK1746 |
| ATOM | 1655 | NE  | ARG | 219 | -22.904 | 48.071 | 39.462 | 1.00 | 27.67 | 1DIK1747 |
| ATOM | 1656 | CZ  | ARG | 219 | -21.656 | 47.650 | 39.254 | 1.00 | 29.17 | 1DIK1748 |
| ATOM | 1657 | NH1 | ARG | 219 | -20.638 | 48.169 | 39.933 | 1.00 | 21.50 | 1DIK1749 |
| ATOM | 1658 | NH2 | ARG | 219 | -21.423 | 46.698 | 38.360 | 1.00 | 32.18 | 1DIK1750 |
| ATOM | 1659 | N   | LEU | 220 | -25.437 | 45.223 | 42.765 | 1.00 | 32.50 | 1DIK1751 |
| ATOM | 1660 | CA  | LEU | 220 | -26.504 | 44.377 | 42.243 | 1.00 | 33.49 | 1DIK1752 |
| ATOM | 1661 | C   | LEU | 220 | -27.609 | 44.104 | 43.260 | 1.00 | 32.41 | 1DIK1753 |
| ATOM | 1662 | O   | LEU | 220 | -28.790 | 44.123 | 42.901 | 1.00 | 29.58 | 1DIK1754 |
| ATOM | 1663 | CB  | LEU | 220 | -25.948 | 43.043 | 41.727 | 1.00 | 34.41 | 1DIK1755 |
| ATOM | 1664 | CG  | LEU | 220 | -25.043 | 43.081 | 40.494 | 1.00 | 36.51 | 1DIK1756 |
| ATOM | 1665 | CD1 | LEU | 220 | -24.636 | 41.657 | 40.138 | 1.00 | 35.97 | 1DIK1757 |
| ATOM | 1666 | CD2 | LEU | 220 | -25.758 | 43.753 | 39.331 | 1.00 | 27.80 | 1DIK1758 |
| ATOM | 1667 | N   | GLU | 221 | -27.233 | 43.848 | 44.517 | 1.00 | 35.98 | 1DIK1759 |
| ATOM | 1668 | CA  | GLU | 221 | -28.213 | 43.560 | 45.576 | 1.00 | 38.20 | 1DIK1760 |
| ATOM | 1669 | C   | GLU | 221 | -29.100 | 44.771 | 45.795 | 1.00 | 39.87 | 1DIK1761 |
| ATOM | 1670 | O   | GLU | 221 | -30.302 | 44.646 | 46.042 | 1.00 | 40.20 | 1DIK1762 |
| ATOM | 1671 | CB  | GLU | 221 | -27.519 | 43.179 | 46.881 | 1.00 | 35.73 | 1DIK1763 |
| ATOM | 1672 | CG  | GLU | 221 | -26.800 | 41.848 | 46.816 | 1.00 | 39.22 | 1DIK1764 |
| ATOM | 1673 | CD  | GLU | 221 | -26.340 | 41.346 | 48.176 | 1.00 | 42.91 | 1DIK1765 |
| ATOM | 1674 | OE1 | GLU | 221 | -25.555 | 42.054 | 48.861 | 1.00 | 43.49 | 1DIK1766 |
| ATOM | 1675 | OE2 | GLU | 221 | -26.770 | 40.234 | 48.557 | 1.00 | 41.59 | 1DIK1767 |
| ATOM | 1676 | N   | ASN | 222 | -28.486 | 45.943 | 45.689 | 1.00 | 41.49 | 1DIK1768 |
| ATOM | 1677 | CA  | ASN | 222 | -29.182 | 47.208 | 45.841 | 1.00 | 45.54 | 1DIK1769 |
| ATOM | 1678 | C   | ASN | 222 | -30.139 | 47.515 | 44.672 | 1.00 | 43.33 | 1DIK1770 |
| ATOM | 1679 | O   | ASN | 222 | -31.257 | 47.971 | 44.903 | 1.00 | 45.33 | 1DIK1771 |
| ATOM | 1680 | CB  | ASN | 222 | -28.158 | 48.329 | 46.017 | 1.00 | 54.00 | 1DIK1772 |
| ATOM | 1681 | CG  | ASN | 222 | -28.797 | 49.701 | 46.091 | 1.00 | 62.65 | 1DIK1773 |
| ATOM | 1682 | OD1 | ASN | 222 | -28.256 | 50.675 | 45.558 | 1.00 | 68.49 | 1DIK1774 |
| ATOM | 1683 | ND2 | ASN | 222 | -29.951 | 49.793 | 46.752 | 1.00 | 66.30 | 1DIK1775 |
| ATOM | 1684 | N   | ASP | 223 | -29.715 | 47.268 | 43.433 | 1.00 | 41.09 | 1DIK1776 |
| ATOM | 1685 | CA  | ASP | 223 | -30.562 | 47.521 | 42.256 | 1.00 | 37.20 | 1DIK1777 |
| ATOM | 1686 | C   | ASP | 223 | -31.655 | 46.482 | 42.022 | 1.00 | 38.11 | 1DIK1778 |
| ATOM | 1687 | O   | ASP | 223 | -32.712 | 46.809 | 41.482 | 1.00 | 39.42 | 1DIK1779 |
| ATOM | 1688 | CB  | ASP | 223 | -29.717 | 47.636 | 40.990 | 1.00 | 35.50 | 1DIK1780 |
| ATOM | 1689 | CG  | ASP | 223 | -28.772 | 48.821 | 41.017 | 1.00 | 38.50 | 1DIK1781 |
| ATOM | 1690 | OD1 | ASP | 223 | -28.977 | 49.753 | 41.826 | 1.00 | 40.58 | 1DIK1782 |
| ATOM | 1691 | OD2 | ASP | 223 | -27.811 | 48.827 | 40.220 | 1.00 | 41.14 | 1DIK1783 |
| ATOM | 1692 | N   | LEU | 224 | -31.412 | 45.231 | 42.405 | 1.00 | 40.35 | 1DIK1784 |
| ATOM | 1693 | CA  | LEU | 224 | -32.427 | 44.188 | 42.232 | 1.00 | 45.31 | 1DIK1785 |
| ATOM | 1694 | C   | LEU | 224 | -32.971 | 43.798 | 43.604 | 1.00 | 49.10 | 1DIK1786 |
| ATOM | 1695 | O   | LEU | 224 | -32.732 | 42.685 | 44.077 | 1.00 | 52.62 | 1DIK1787 |
| ATOM | 1696 | CB  | LEU | 224 | -31.835 | 42.956 | 41.543 | 1.00 | 42.30 | 1DIK1788 |
| ATOM | 1697 | CG  | LEU | 224 | -31.389 | 43.069 | 40.086 | 1.00 | 40.02 | 1DIK1789 |
| ATOM | 1698 | CD1 | LEU | 224 | -30.443 | 41.925 | 39.770 | 1.00 | 37.89 | 1DIK1790 |
| ATOM | 1699 | CD2 | LEU | 224 | -32.594 | 43.046 | 39.173 | 1.00 | 37.37 | 1DIK1791 |
| ATOM | 1700 | N   | SER | 225 | -33.701 | 44.721 | 44.232 | 1.00 | 50.58 | 1DIK1792 |
| ATOM | 1701 | CA  | SER | 225 | -34.283 | 44.522 | 45.564 | 1.00 | 49.16 | 1DIK1793 |
| ATOM | 1702 | C   | SER | 225 | -34.977 | 43.185 | 45.737 | 1.00 | 45.74 | 1DIK1794 |
| ATOM | 1703 | O   | SER | 225 | -35.844 | 42.816 | 44.944 | 1.00 | 45.28 | 1DIK1795 |
| ATOM | 1704 | CB  | SER | 225 | -35.280 | 45.639 | 45.880 | 1.00 | 51.40 | 1DIK1796 |

FIG. 8-27

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1705 | OG  | SER | 225 | -34.660 | 46.909 | 45.793 | 1.00 | 58.48 | 1DIK1797 |
| ATOM | 1706 | N   | GLY | 226 | -34.591 | 42.465 | 46.781 | 1.00 | 42.17 | 1DIK1798 |
| ATOM | 1707 | CA  | GLY | 226 | -35.196 | 41.173 | 47.040 | 1.00 | 43.89 | 1DIK1799 |
| ATOM | 1708 | C   | GLY | 226 | -34.226 | 40.060 | 46.731 | 1.00 | 44.37 | 1DIK1800 |
| ATOM | 1709 | O   | GLY | 226 | -34.461 | 38.900 | 47.051 | 1.00 | 47.89 | 1DIK1801 |
| ATOM | 1710 | N   | VAL | 227 | -33.119 | 40.422 | 46.108 | 1.00 | 42.94 | 1DIK1802 |
| ATOM | 1711 | CA  | VAL | 227 | -32.108 | 39.465 | 45.727 | 1.00 | 43.07 | 1DIK1803 |
| ATOM | 1712 | C   | VAL | 227 | -30.903 | 39.493 | 46.670 | 1.00 | 41.79 | 1DIK1804 |
| ATOM | 1713 | O   | VAL | 227 | -30.485 | 40.560 | 47.135 | 1.00 | 41.57 | 1DIK1805 |
| ATOM | 1714 | CB  | VAL | 227 | -31.676 | 39.750 | 44.252 | 1.00 | 45.33 | 1DIK1806 |
| ATOM | 1715 | CG1 | VAL | 227 | -30.316 | 39.167 | 43.947 | 1.00 | 44.28 | 1DIK1807 |
| ATOM | 1716 | CG2 | VAL | 227 | -32.721 | 39.189 | 43.297 | 1.00 | 44.62 | 1DIK1808 |
| ATOM | 1717 | N   | THR | 228 | -30.371 | 38.307 | 46.963 | 1.00 | 40.83 | 1DIK1809 |
| ATOM | 1718 | CA  | THR | 228 | -29.166 | 38.159 | 47.785 | 1.00 | 39.67 | 1DIK1810 |
| ATOM | 1719 | C   | THR | 228 | -28.234 | 37.336 | 46.893 | 1.00 | 37.22 | 1DIK1811 |
| ATOM | 1720 | O   | THR | 228 | -28.679 | 36.394 | 46.235 | 1.00 | 33.46 | 1DIK1812 |
| ATOM | 1721 | CB  | THR | 228 | -29.412 | 37.398 | 49.124 | 1.00 | 41.63 | 1DIK1813 |
| ATOM | 1722 | OG1 | THR | 228 | -29.990 | 36.116 | 48.867 | 1.00 | 44.83 | 1DIK1814 |
| ATOM | 1723 | CG2 | THR | 228 | -30.339 | 38.177 | 50.021 | 1.00 | 43.36 | 1DIK1845 |
| ATOM | 1724 | N   | LEU | 229 | -26.957 | 37.689 | 46.862 | 1.00 | 36.42 | 1DIK1816 |
| ATOM | 1725 | CA  | LEU | 229 | -25.991 | 36.988 | 46.022 | 1.00 | 35.85 | 1DIK1817 |
| ATOM | 1726 | C   | LEU | 229 | -24.689 | 36.735 | 46.771 | 1.00 | 36.00 | 1DIK1818 |
| ATOM | 1727 | O   | LEU | 229 | -24.302 | 37.520 | 47.630 | 1.00 | 37.29 | 1DIK1819 |
| ATOM | 1728 | CB  | LEU | 229 | -25.664 | 37.848 | 44.799 | 1.00 | 35.69 | 1DIK1820 |
| ATOM | 1729 | CG  | LEU | 229 | -26.790 | 38.240 | 43.850 | 1.00 | 31.77 | 1DIK1821 |
| ATOM | 1730 | CD1 | LEU | 229 | -26.254 | 39.233 | 42.860 | 1.00 | 32.31 | 1DIK1822 |
| ATOM | 1731 | CD2 | LEU | 229 | -27.334 | 37.014 | 43.143 | 1.00 | 31.68 | 1DIK1823 |
| ATOM | 1732 | N   | THR | 230 | -24.011 | 35.643 | 46.447 | 1.00 | 33.91 | 1DIK1824 |
| ATOM | 1733 | CA  | THR | 230 | -22.729 | 35.359 | 47.072 | 1.00 | 34.10 | 1DIK1825 |
| ATOM | 1734 | C   | THR | 230 | -21.743 | 35.959 | 46.083 | 1.00 | 34.69 | 1DIK1826 |
| ATOM | 1735 | O   | THR | 230 | -22.119 | 36.265 | 44.944 | 1.00 | 32.68 | 1DIK1827 |
| ATOM | 1736 | CB  | THR | 230 | -22.466 | 33.838 | 47.178 | 1.00 | 34.26 | 1DIK1828 |
| ATOM | 1737 | OG1 | THR | 230 | -22.463 | 33.260 | 45.870 | 1.00 | 30.93 | 1DIK1829 |
| ATOM | 1738 | CG2 | THR | 230 | -23.552 | 33.151 | 47.997 | 1.00 | 31.47 | 1DIK1830 |
| ATOM | 1739 | N   | ASP | 231 | -20.493 | 36.131 | 46.494 | 1.00 | 37.66 | 1DIK1831 |
| ATOM | 1740 | CA  | ASP | 231 | -19.478 | 36.674 | 45.592 | 1.00 | 39.60 | 1DIK1832 |
| ATOM | 1741 | C   | ASP | 231 | -19.312 | 35.794 | 44.344 | 1.00 | 40.76 | 1DIK1833 |
| ATOM | 1742 | O   | ASP | 231 | -19.186 | 36.303 | 43.227 | 1.00 | 43.31 | 1DIK1834 |
| ATOM | 1743 | CB  | ASP | 231 | -18.138 | 36.827 | 46.313 | 1.00 | 39.61 | 1DIK1835 |
| ATOM | 1744 | CG  | ASP | 231 | -18.147 | 37.956 | 47.321 | 1.00 | 44.99 | 1DIK1836 |
| ATOM | 1745 | OD1 | ASP | 231 | -19.042 | 38.825 | 47.233 | 1.00 | 45.50 | 1DIK1837 |
| ATOM | 1746 | OD2 | ASP | 231 | -17.254 | 37.976 | 48.202 | 1.00 | 49.54 | 1DIK1838 |
| ATOM | 1747 | N   | THR | 232 | -19.324 | 34.479 | 44.544 | 1.00 | 38.28 | 1DIK1839 |
| ATOM | 1748 | CA  | THR | 232 | -19.188 | 33.520 | 43.458 | 1.00 | 34.10 | 1DIK1840 |
| ATOM | 1749 | C   | THR | 232 | -20.280 | 33.679 | 42.416 | 1.00 | 32.21 | 1DIK1841 |
| ATOM | 1750 | O   | THR | 232 | -19.994 | 33.663 | 41.222 | 1.00 | 34.55 | 1DIK1842 |
| ATOM | 1751 | CB  | THR | 232 | -19.210 | 32.075 | 44.010 | 1.00 | 34.37 | 1DIK1843 |
| ATOM | 1752 | OG1 | THR | 232 | -18.074 | 31.896 | 44.856 | 1.00 | 35.55 | 1DIK1844 |
| ATOM | 1753 | CG2 | THR | 232 | -19.163 | 31.037 | 42.894 | 1.00 | 26.21 | 1DIK1845 |
| ATOM | 1754 | N   | GLU | 233 | -21.525 | 33.835 | 42.856 | 1.00 | 28.27 | 1DIK1846 |
| ATOM | 1755 | CA  | GLU | 233 | -22.637 | 33.978 | 41.919 | 1.00 | 29.61 | 1DIK1847 |
| ATOM | 1756 | C   | GLU | 233 | -22.500 | 35.196 | 41.016 | 1.00 | 27.81 | 1DIK1848 |
| ATOM | 1757 | O   | GLU | 233 | -22.923 | 35.162 | 39.872 | 1.00 | 30.27 | 1DIK1849 |
| ATOM | 1758 | CB  | GLU | 233 | -23.970 | 34.029 | 42.660 | 1.00 | 32.29 | 1DIK1850 |
| ATOM | 1759 | CG  | GLU | 233 | -24.262 | 32.784 | 43.483 | 1.00 | 38.65 | 1DIK1851 |
| ATOM | 1760 | CD  | GLU | 233 | -25.539 | 32.893 | 44.298 | 1.00 | 41.41 | 1DIK1852 |
| ATOM | 1761 | OE1 | GLU | 233 | -25.716 | 33.897 | 45.041 | 1.00 | 39.47 | 1DIK1853 |
| ATOM | 1762 | OE2 | GLU | 233 | -26.366 | 31.961 | 44.188 | 1.00 | 43.44 | 1DIK1854 |
| ATOM | 1763 | N   | VAL | 234 | -21.916 | 36.270 | 41.529 | 1.00 | 26.78 | 1DIK1855 |
| ATOM | 1764 | CA  | VAL | 234 | -21.718 | 37.471 | 40.730 | 1.00 | 27.81 | 1DIK1856 |
| ATOM | 1765 | C   | VAL | 234 | -20.779 | 37.131 | 39.555 | 1.00 | 28.07 | 1DIK1857 |
| ATOM | 1766 | O   | VAL | 234 | -21.031 | 37.532 | 38.409 | 1.00 | 27.61 | 1DIK1858 |
| ATOM | 1767 | CB  | VAL | 234 | -21.139 | 38.631 | 41.599 | 1.00 | 29.25 | 1DIK1859 |
| ATOM | 1768 | CG1 | VAL | 234 | -20.669 | 39.790 | 40.719 | 1.00 | 26.00 | 1DIK1860 |
| ATOM | 1769 | CG2 | VAL | 234 | -22.202 | 39.114 | 42.574 | 1.00 | 23.62 | 1DIK1861 |
| ATOM | 1770 | N   | THR | 235 | -19.712 | 36.383 | 39.830 | 1.00 | 25.71 | 1DIK1862 |

FIG. 8-28

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1771 | CA  | THR | 235 | -18.784 | 35.991 | 38.773 | 1.00 | 27.53 | IDIK1863 |
| ATOM | 1772 | C   | THR | 235 | -19.506 | 35.104 | 37.728 | 1.00 | 28.27 | IDIK1864 |
| ATOM | 1773 | O   | THR | 235 | -19.098 | 35.065 | 36.565 | 1.00 | 27.05 | IDIK1865 |
| ATOM | 1774 | CB  | THR | 235 | -17.513 | 35.272 | 39.329 | 1.00 | 26.76 | IDIK1866 |
| ATOM | 1775 | OG1 | THR | 235 | -17.866 | 33.998 | 39.876 | 1.00 | 28.53 | IDIK1867 |
| ATOM | 1776 | CG2 | THR | 235 | -16.859 | 36.104 | 40.416 | 1.00 | 27.73 | IDIK1868 |
| ATOM | 1777 | N   | TYR | 236 | -20.575 | 34.406 | 38.129 | 1.00 | 27.79 | IDIK1869 |
| ATOM | 1778 | CA  | TYR | 236 | -21.339 | 33.577 | 37.188 | 1.00 | 27.49 | IDIK1870 |
| ATOM | 1779 | C   | TYR | 236 | -22.024 | 34.490 | 36.171 | 1.00 | 28.77 | IDIK1871 |
| ATOM | 1780 | O   | TYR | 236 | -22.106 | 34.165 | 34.980 | 1.00 | 30.28 | IDIK1872 |
| ATOM | 1781 | CB  | TYR | 236 | -22.405 | 32.741 | 37.908 | 1.00 | 28.51 | IDIK1873 |
| ATOM | 1782 | CG  | TYR | 236 | -21.873 | 31.589 | 38.735 | 1.00 | 31.65 | IDIK1874 |
| ATOM | 1783 | CD1 | TYR | 236 | -20.517 | 31.243 | 38.711 | 1.00 | 32.72 | IDIK1875 |
| ATOM | 1784 | CD2 | TYR | 236 | -22.733 | 30.838 | 39.546 | 1.00 | 33.46 | IDIK1876 |
| ATOM | 1785 | CE1 | TYR | 236 | -20.030 | 30.181 | 39.471 | 1.00 | 33.24 | IDIK1877 |
| ATOM | 1786 | CE2 | TYR | 236 | -22.258 | 29.768 | 40.315 | 1.00 | 35.17 | IDIK1878 |
| ATOM | 1787 | CZ  | TYR | 236 | -20.904 | 29.446 | 40.271 | 1.00 | 39.13 | IDIK1879 |
| ATOM | 1788 | OH  | TYR | 236 | -20.422 | 28.393 | 41.025 | 1.00 | 43.32 | IDIK1880 |
| ATOM | 1789 | N   | LEU | 237 | -22.513 | 35.632 | 36.656 | 1.00 | 29.13 | IDIK1881 |
| ATOM | 1790 | CA  | LEU | 237 | -23.179 | 36.634 | 35.818 | 1.00 | 27.63 | IDIK1882 |
| ATOM | 1791 | C   | LEU | 237 | -22.173 | 37.237 | 34.842 | 1.00 | 27.17 | IDIK1883 |
| ATOM | 1792 | O   | LEU | 237 | -22.506 | 37.527 | 33.699 | 1.00 | 30.67 | IDIK1884 |
| ATOM | 1793 | CB  | LEU | 237 | -23.813 | 37.734 | 36.682 | 1.00 | 25.77 | IDIK1885 |
| ATOM | 1794 | CG  | LEU | 237 | -25.081 | 37.327 | 37.447 | 1.00 | 22.88 | IDIK1886 |
| ATOM | 1795 | CD1 | LEU | 237 | -25.528 | 38.415 | 38.421 | 1.00 | 24.36 | IDIK1887 |
| ATOM | 1796 | CD2 | LEU | 237 | -26.165 | 37.036 | 36.455 | 1.00 | 17.71 | IDIK1888 |
| ATOM | 1797 | N   | MET | 238 | -20.940 | 37.423 | 35.286 | 1.00 | 24.39 | IDIK1889 |
| ATOM | 1798 | CA  | MET | 238 | -19.918 | 37.948 | 34.403 | 1.00 | 25.37 | IDIK1890 |
| ATOM | 1799 | C   | MET | 238 | -19.575 | 36.882 | 33.359 | 1.00 | 28.12 | IDIK1891 |
| ATOM | 1800 | O   | MET | 238 | -19.335 | 37.210 | 32.195 | 1.00 | 31.98 | IDIK1892 |
| ATOM | 1801 | CB  | MET | 238 | -18.684 | 38.358 | 35.203 | 1.00 | 21.01 | IDIK1893 |
| ATOM | 1802 | CG  | MET | 238 | -18.967 | 39.504 | 36.148 | 1.00 | 18.56 | IDIK1894 |
| ATOM | 1803 | SD  | MET | 238 | -17.500 | 40.183 | 36.915 | 1.00 | 26.85 | IDIK1895 |
| ATOM | 1804 | CE  | MET | 238 | -16.964 | 41.396 | 35.681 | 1.00 | 20.81 | IDIK1896 |
| ATOM | 1805 | N   | ASP | 239 | -19.562 | 35.608 | 33.764 | 1.00 | 29.27 | IDIK1897 |
| ATOM | 1806 | CA  | ASP | 239 | -19.268 | 34.497 | 32.838 | 1.00 | 28.12 | IDIK1898 |
| ATOM | 1807 | C   | ASP | 239 | -20.314 | 34.486 | 31.727 | 1.00 | 26.51 | IDIK1899 |
| ATOM | 1808 | O   | ASP | 239 | -20.003 | 34.210 | 30.577 | 1.00 | 27.19 | IDIK1900 |
| ATOM | 1809 | CB  | ASP | 239 | -19.340 | 33.129 | 33.542 | 1.00 | 27.22 | IDIK1901 |
| ATOM | 1810 | CG  | ASP | 239 | -18.144 | 32.836 | 34.448 | 1.00 | 24.04 | IDIK1902 |
| ATOM | 1811 | OD1 | ASP | 239 | -17.162 | 33.602 | 34.461 | 1.00 | 22.09 | IDIK1903 |
| ATOM | 1812 | OD2 | ASP | 239 | -18.194 | 31.807 | 35.162 | 1.00 | 27.85 | IDIK1904 |
| ATOM | 1813 | N   | MET | 240 | -21.557 | 34.784 | 32.089 | 1.00 | 24.64 | IDIK1905 |
| ATOM | 1814 | CA  | MET | 240 | -22.664 | 34.800 | 31.141 | 1.00 | 26.17 | IDIK1906 |
| ATOM | 1815 | C   | MET | 240 | -22.509 | 35.815 | 30.018 | 1.00 | 26.18 | IDIK1907 |
| ATOM | 1816 | O   | MET | 240 | -23.034 | 35.621 | 28.924 | 1.00 | 25.09 | IDIK1908 |
| ATOM | 1817 | CB  | MET | 240 | -23.984 | 35.039 | 31.877 | 1.00 | 29.12 | IDIK1909 |
| ATOM | 1818 | CG  | MET | 240 | -24.519 | 33.809 | 32.591 | 1.00 | 28.59 | IDIK1910 |
| ATOM | 1819 | SD  | MET | 240 | -24.873 | 32.469 | 31.404 | 1.00 | 34.30 | IDIK1911 |
| ATOM | 1820 | CE  | MET | 240 | -26.354 | 33.141 | 30.505 | 1.00 | 25.69 | IDIK1912 |
| ATOM | 1821 | N   | CYS | 241 | -21.793 | 36.899 | 30.280 | 1.00 | 25.30 | IDIK1913 |
| ATOM | 1822 | CA  | CYS | 241 | -21.581 | 37.910 | 29.254 | 1.00 | 27.89 | IDIK1914 |
| ATOM | 1823 | C   | CYS | 241 | -20.931 | 37.244 | 28.032 | 1.00 | 25.49 | IDIK1915 |
| ATOM | 1824 | O   | CYS | 241 | -21.348 | 37.459 | 26.892 | 1.00 | 26.76 | IDIK1916 |
| ATOM | 1825 | CB  | CYS | 241 | -20.710 | 39.049 | 29.814 | 1.00 | 24.99 | IDIK1917 |
| ATOM | 1826 | SG  | CYS | 241 | -19.856 | 40.115 | 28.598 | 1.00 | 27.44 | IDIK1918 |
| ATOM | 1827 | N   | SER | 242 | -19.924 | 36.420 | 28.291 | 1.00 | 25.28 | IDIK1919 |
| ATOM | 1828 | CA  | SER | 242 | -19.197 | 35.698 | 27.256 | 1.00 | 25.73 | IDIK1920 |
| ATOM | 1829 | C   | SER | 242 | -20.072 | 34.679 | 26.507 | 1.00 | 26.63 | IDIK1921 |
| ATOM | 1830 | O   | SER | 242 | -20.275 | 34.786 | 25.289 | 1.00 | 25.57 | IDIK1922 |
| ATOM | 1831 | CB  | SER | 242 | -18.003 | 34.989 | 27.897 | 1.00 | 27.44 | IDIK1923 |
| ATOM | 1832 | OG  | SER | 242 | -17.294 | 34.219 | 26.949 | 1.00 | 39.33 | IDIK1924 |
| ATOM | 1833 | N   | PHE | 243 | -20.594 | 33.697 | 27.238 | 1.00 | 26.85 | IDIK1925 |
| ATOM | 1834 | CA  | PHE | 243 | -21.419 | 32.642 | 26.648 | 1.00 | 26.10 | IDIK1926 |
| ATOM | 1835 | C   | PHE | 243 | -22.663 | 33.140 | 25.941 | 1.00 | 27.04 | IDIK1927 |
| ATOM | 1836 | O   | PHE | 243 | -23.021 | 32.637 | 24.872 | 1.00 | 26.53 | IDIK1928 |

FIG. 8-29

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1837 | CB  | PHE | 243 | -21.818 | 31.617 | 27.714 | 1.00 | 25.98 | IDIK1929 |
| ATOM | 1838 | CG  | PHE | 243 | -20.655 | 30.845 | 28.277 | 1.00 | 26.19 | IDIK1930 |
| ATOM | 1839 | CD1 | PHE | 243 | -20.075 | 29.805 | 27.549 | 1.00 | 23.12 | IDIK1931 |
| ATOM | 1840 | CD2 | PHE | 243 | -20.129 | 31.168 | 29.530 | 1.00 | 21.56 | IDIK1932 |
| ATOM | 1841 | CE1 | PHE | 243 | -18.978 | 29.093 | 28.066 | 1.00 | 25.40 | IDIK1933 |
| ATOM | 1842 | CE2 | PHE | 243 | -19.042 | 30.469 | 30.052 | 1.00 | 22.05 | IDIK1934 |
| ATOM | 1843 | CZ  | PHE | 243 | -18.461 | 29.427 | 29.319 | 1.00 | 21.32 | IDIK1935 |
| ATOM | 1844 | N   | ASP | 244 | -23.330 | 34.126 | 26.529 | 1.00 | 27.71 | IDIK1936 |
| ATOM | 1845 | CA  | ASP | 244 | -24.537 | 34.643 | 25.907 | 1.00 | 30.62 | IDIK1937 |
| ATOM | 1846 | C   | ASP | 244 | -24.235 | 35.494 | 24.666 | 1.00 | 32.18 | IDIK1938 |
| ATOM | 1847 | O   | ASP | 244 | -25.120 | 35.741 | 23.854 | 1.00 | 34.05 | IDIK1939 |
| ATOM | 1848 | CB  | ASP | 244 | -25.379 | 35.428 | 26.917 | 1.00 | 27.50 | IDIK1940 |
| ATOM | 1849 | CG  | ASP | 244 | -26.785 | 35.723 | 26.404 | 1.00 | 28.82 | IDIK1941 |
| ATOM | 1850 | OD1 | ASP | 244 | -27.531 | 34.777 | 26.077 | 1.00 | 24.13 | IDIK1942 |
| ATOM | 1851 | OD2 | ASP | 244 | -27.149 | 36.910 | 26.323 | 1.00 | 30.15 | IDIK1943 |
| ATOM | 1852 | N   | THR | 245 | -22.996 | 35.944 | 24.510 | 1.00 | 32.39 | IDIK1944 |
| ATOM | 1853 | CA  | THR | 245 | -22.658 | 36.740 | 23.343 | 1.00 | 33.50 | IDIK1945 |
| ATOM | 1854 | C   | THR | 245 | -22.282 | 35.850 | 22.153 | 1.00 | 38.87 | IDIK1946 |
| ATOM | 1855 | O   | THR | 245 | -22.911 | 35.918 | 21.091 | 1.00 | 37.64 | IDIK1947 |
| ATOM | 1856 | CB  | THR | 245 | -21.511 | 37.706 | 23.647 | 1.00 | 32.72 | IDIK1948 |
| ATOM | 1857 | OG1 | THR | 245 | -21.940 | 38.652 | 24.631 | 1.00 | 37.51 | IDIK1949 |
| ATOM | 1858 | CG2 | THR | 245 | -21.084 | 38.446 | 22.394 | 1.00 | 28.33 | IDIK1950 |
| ATOM | 1859 | N   | ILE | 246 | -21.268 | 35.008 | 22.335 | 1.00 | 40.95 | IDIK1951 |
| ATOM | 1860 | CA  | ILE | 246 | -20.803 | 34.140 | 21.262 | 1.00 | 43.89 | IDIK1952 |
| ATOM | 1861 | C   | ILE | 246 | -21.590 | 32.847 | 21.034 | 1.00 | 48.67 | IDIK1953 |
| ATOM | 1862 | O   | ILE | 246 | -21.151 | 31.992 | 20.262 | 1.00 | 48.67 | IDIK1954 |
| ATOM | 1863 | CB  | ILE | 246 | -19.279 | 33.826 | 21.419 | 1.00 | 41.80 | IDIK1955 |
| ATOM | 1864 | CG1 | ILE | 246 | -18.988 | 33.144 | 22.757 | 1.00 | 37.29 | IDIK1956 |
| ATOM | 1865 | CG2 | ILE | 246 | -18.464 | 35.125 | 21.329 | 1.00 | 43.70 | IDIK1957 |
| ATOM | 1866 | CD1 | ILE | 246 | -17.508 | 33.098 | 23.087 | 1.00 | 29.59 | IDIK1958 |
| ATOM | 1867 | N   | SER | 247 | -22.747 | 32.710 | 21.688 | 1.00 | 56.97 | IDIK1959 |
| ATOM | 1868 | CA  | SER | 247 | -23.601 | 31.523 | 21.534 | 1.00 | 63.90 | IDIK1960 |
| ATOM | 1869 | C   | SER | 247 | -24.145 | 31.424 | 20.107 | 1.00 | 70.33 | IDIK1961 |
| ATOM | 1870 | O   | SER | 247 | -24.503 | 30.328 | 19.662 | 1.00 | 73.70 | IDIK1962 |
| ATOM | 1871 | CB  | SER | 247 | -24.787 | 31.567 | 22.499 | 1.00 | 67.11 | IDIK1963 |
| ATOM | 1872 | OG  | SER | 247 | -25.783 | 32.483 | 22.058 | 1.00 | 66.63 | IDIK1964 |
| ATOM | 1873 | N   | THR | 248 | -24.213 | 32.569 | 19.411 | 1.00 | 74.67 | IDIK1965 |
| ATOM | 1874 | CA  | THR | 248 | -24.683 | 32.671 | 18.015 | 1.00 | 74.94 | IDIK1966 |
| ATOM | 1875 | C   | THR | 248 | -23.546 | 33.054 | 17.049 | 1.00 | 76.44 | IDIK1967 |
| ATOM | 1876 | O   | THR | 248 | -23.272 | 34.241 | 16.808 | 1.00 | 77.32 | IDIK1968 |
| ATOM | 1877 | CB  | THR | 248 | -25.810 | 33.719 | 17.893 | 1.00 | 74.59 | IDIK1969 |
| ATOM | 1878 | OG1 | THR | 248 | -26.917 | 33.299 | 18.699 | 1.00 | 74.12 | IDIK1970 |
| ATOM | 1879 | CG2 | THR | 248 | -26.262 | 33.888 | 16.427 | 1.00 | 72.58 | IDIK1971 |
| ATOM | 1880 | N   | THR | 253 | -23.919 | 38.646 | 16.591 | 1.00 | 49.08 | IDIK1972 |
| ATOM | 1881 | CA  | THR | 253 | -24.110 | 39.972 | 15.999 | 1.00 | 51.56 | IDIK1973 |
| ATOM | 1882 | C   | THR | 253 | -24.258 | 41.028 | 17.100 | 1.00 | 49.54 | IDIK1974 |
| ATOM | 1883 | O   | THR | 253 | -23.757 | 42.146 | 16.965 | 1.00 | 49.39 | IDIK1975 |
| ATOM | 1884 | CB  | THR | 253 | -25.394 | 40.051 | 15.103 | 1.00 | 52.26 | IDIK1976 |
| ATOM | 1885 | OG1 | THR | 253 | -25.489 | 38.881 | 14.282 | 1.00 | 61.78 | IDIK1977 |
| ATOM | 1886 | CG2 | THR | 253 | -25.344 | 41.284 | 14.189 | 1.00 | 51.28 | IDIK1978 |
| ATOM | 1887 | N   | LYS | 254 | -24.941 | 40.670 | 18.185 | 1.00 | 46.23 | IDIK1979 |
| ATOM | 1888 | CA  | LYS | 254 | -25.170 | 41.610 | 19.275 | 1.00 | 45.73 | IDIK1980 |
| ATOM | 1889 | C   | LYS | 254 | -24.562 | 41.222 | 20.618 | 1.00 | 42.99 | IDIK1981 |
| ATOM | 1890 | O   | LYS | 254 | -24.470 | 40.044 | 20.939 | 1.00 | 45.43 | IDIK1982 |
| ATOM | 1891 | CB  | LYS | 254 | -26.664 | 41.864 | 19.410 | 1.00 | 46.12 | IDIK1983 |
| ATOM | 1892 | CG  | LYS | 254 | -27.214 | 42.520 | 18.157 | 1.00 | 51.91 | IDIK1984 |
| ATOM | 1893 | CD  | LYS | 254 | -28.671 | 42.840 | 18.273 | 1.00 | 56.51 | IDIK1985 |
| ATOM | 1894 | CE  | LYS | 254 | -29.168 | 43.456 | 16.987 | 1.00 | 60.44 | IDIK1986 |
| ATOM | 1895 | NZ  | LYS | 254 | -30.576 | 43.918 | 17.160 | 1.00 | 67.71 | IDIK1987 |
| ATOM | 1896 | N   | LEU | 255 | -24.141 | 42.226 | 21.387 | 1.00 | 38.90 | IDIK1988 |
| ATOM | 1897 | CA  | LEU | 255 | -23.533 | 42.022 | 22.705 | 1.00 | 33.29 | IDIK1989 |
| ATOM | 1898 | C   | LEU | 255 | -24.584 | 41.661 | 23.751 | 1.00 | 32.90 | IDIK1990 |
| ATOM | 1899 | O   | LEU | 255 | -25.637 | 42.288 | 23.825 | 1.00 | 33.07 | IDIK1991 |
| ATOM | 1900 | CB  | LEU | 255 | -22.797 | 43.286 | 23.141 | 1.00 | 25.06 | IDIK1992 |
| ATOM | 1901 | CG  | LEU | 255 | -21.856 | 43.213 | 24.344 | 1.00 | 26.05 | IDIK1993 |
| ATOM | 1902 | CD1 | LEU | 255 | -20.707 | 42.242 | 24.095 | 1.00 | 21.04 | IDIK1994 |

FIG. 8-30

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1903 | CD2 | LEU | 255 | -21.326 | 44.595 | 24.608 | 1.00 | 22.14 | 1DIK1995 |
| ATOM | 1904 | N   | SER | 256 | -24.293 | 40.647 | 24.558 | 1.00 | 32.93 | 1DIK1996 |
| ATOM | 1905 | CA  | SER | 256 | -25.212 | 40.207 | 25.598 | 1.00 | 31.52 | 1DIK1997 |
| ATOM | 1906 | C   | SER | 256 | -25.489 | 41.293 | 26.643 | 1.00 | 32.01 | 1DIK1998 |
| ATOM | 1907 | O   | SER | 256 | -24.574 | 42.013 | 27.082 | 1.00 | 30.64 | 1DIK1999 |
| ATOM | 1908 | CB  | SER | 256 | -24.650 | 38.965 | 26.306 | 1.00 | 30.76 | 1DIK2000 |
| ATOM | 1909 | OG  | SER | 256 | -25.446 | 38.602 | 27.430 | 1.00 | 27.78 | 1DIK2001 |
| ATOM | 1910 | N   | PRO | 257 | -26.766 | 41.432 | 27.051 | 1.00 | 32.46 | 1DIK2002 |
| ATOM | 1911 | CA  | PRO | 257 | -27.131 | 42.434 | 28.060 | 1.00 | 32.73 | 1DIK2003 |
| ATOM | 1912 | C   | PRO | 257 | -26.372 | 42.191 | 29.379 | 1.00 | 31.79 | 1DIK2004 |
| ATOM | 1913 | O   | PRO | 257 | -26.136 | 43.130 | 30.138 | 1.00 | 35.33 | 1DIK2005 |
| ATOM | 1914 | CB  | PRO | 257 | -28.644 | 42.239 | 28.209 | 1.00 | 32.20 | 1DIK2006 |
| ATOM | 1915 | CG  | PRO | 257 | -29.053 | 41.696 | 26.861 | 1.00 | 31.42 | 1DIK2007 |
| ATOM | 1916 | CD  | PRO | 257 | -27.960 | 40.701 | 26.587 | 1.00 | 30.36 | 1DIK2008 |
| ATOM | 1917 | N   | PHE | 258 | -25.984 | 40.941 | 29.646 | 1.00 | 27.64 | 1DIK2009 |
| ATOM | 1918 | CA  | PHE | 258 | -25.221 | 40.617 | 30.859 | 1.00 | 25.04 | 1DIK2010 |
| ATOM | 1919 | C   | PHE | 258 | -23.910 | 41.407 | 30.928 | 1.00 | 24.80 | 1DIK2011 |
| ATOM | 1920 | O   | PHE | 258 | -23.389 | 41.661 | 32.011 | 1.00 | 22.95 | 1DIK2012 |
| ATOM | 1921 | CB  | PHE | 258 | -24.877 | 39.122 | 30.911 | 1.00 | 25.72 | 1DIK2013 |
| ATOM | 1922 | CG  | PHE | 258 | -26.033 | 38.239 | 31.253 | 1.00 | 24.20 | 1DIK2014 |
| ATOM | 1923 | CD1 | PHE | 258 | -26.455 | 38.105 | 32.569 | 1.00 | 23.98 | 1DIK2015 |
| ATOM | 1924 | CD2 | PHE | 258 | -26.712 | 37.544 | 30.257 | 1.00 | 26.82 | 1DIK2016 |
| ATOM | 1925 | CE1 | PHE | 258 | -27.543 | 37.288 | 32.890 | 1.00 | 23.72 | 1DIK2017 |
| ATOM | 1926 | CE2 | PHE | 258 | -27.806 | 36.721 | 30.565 | 1.00 | 24.56 | 1DIK2018 |
| ATOM | 1927 | CZ  | PHE | 258 | -28.220 | 36.594 | 31.879 | 1.00 | 24.85 | 1DIK2019 |
| ATOM | 1928 | N   | CYS | 259 | -23.375 | 41.790 | 29.772 | 1.00 | 24.43 | 1DIK2020 |
| ATOM | 1929 | CA  | CYS | 259 | -22.119 | 42.536 | 29.731 | 1.00 | 27.30 | 1DIK2021 |
| ATOM | 1930 | C   | CYS | 259 | -22.323 | 43.952 | 30.207 | 1.00 | 29.38 | 1DIK2022 |
| ATOM | 1931 | O   | CYS | 259 | -21.420 | 44.565 | 30.771 | 1.00 | 29.68 | 1DIK2023 |
| ATOM | 1932 | CB  | CYS | 259 | -21.564 | 42.591 | 28.307 | 1.00 | 26.45 | 1DIK2024 |
| ATOM | 1933 | SG  | CYS | 259 | -21.348 | 40.968 | 27.516 | 1.00 | 30.19 | 1DIK2025 |
| ATOM | 1934 | N   | ASP | 260 | -23.527 | 44.460 | 29.975 | 1.00 | 31.11 | 1DIK2026 |
| ATOM | 1935 | CA  | ASP | 260 | -23.879 | 45.821 | 30.326 | 1.00 | 33.64 | 1DIK2027 |
| ATOM | 1936 | C   | ASP | 260 | -24.002 | 46.070 | 31.815 | 1.00 | 32.59 | 1DIK2028 |
| ATOM | 1937 | O   | ASP | 260 | -24.054 | 47.212 | 32.246 | 1.00 | 34.03 | 1DIK2029 |
| ATOM | 1938 | CB  | ASP | 060 | -25.194 | 46.201 | 29.645 | 1.00 | 39.78 | 1DIK2030 |
| ATOM | 1939 | CG  | ASP | 260 | -25.246 | 47.667 | 29.252 | 1.00 | 44.26 | 1DIK2031 |
| ATOM | 1940 | OD1 | ASP | 260 | -24.190 | 48.185 | 28.834 | 1.00 | 45.01 | 1DIK2032 |
| ATOM | 1941 | OD2 | ASP | 260 | -26.328 | 48.292 | 29.362 | 1.00 | 42.47 | 1DIK2033 |
| ATOM | 1942 | N   | LEU | 261 | -24.051 | 45.007 | 32.603 | 1.00 | 33.47 | 1DIK2034 |
| ATOM | 1943 | CA  | LEU | 261 | -24.200 | 45.149 | 34.043 | 1.00 | 29.07 | 1DIK2035 |
| ATOM | 1944 | C   | LEU | 261 | -22.887 | 45.446 | 34.736 | 1.00 | 29.71 | 1DIK2036 |
| ATOM | 1945 | O   | LEU | 261 | -22.867 | 45.747 | 35.929 | 1.00 | 33.17 | 1DIK2037 |
| ATOM | 1946 | CB  | LEU | 261 | -24.816 | 43.880 | 34.629 | 1.00 | 28.55 | 1DIK2038 |
| ATOM | 1947 | CG  | LEU | 261 | -26.103 | 43.405 | 33.947 | 1.00 | 27.56 | 1DIK2039 |
| ATOM | 1948 | CD1 | LEU | 261 | -26.541 | 42.089 | 34.534 | 1.00 | 25.79 | 1DIK2040 |
| ATOM | 1949 | CD2 | LEU | 261 | -27.197 | 44.441 | 34.130 | 1.00 | 27.02 | 1DIK2041 |
| ATOM | 1950 | N   | PHE | 262 | -21.786 | 45.376 | 33.997 | 1.00 | 29.05 | 1DIK2042 |
| ATOM | 1951 | CA  | PHE | 262 | -20.471 | 45.607 | 34.586 | 1.00 | 27.80 | 1DIK2043 |
| ATOM | 1952 | C   | PHE | 262 | -19.709 | 46.685 | 33.837 | 1.00 | 29.74 | 1DIK2044 |
| ATOM | 1953 | O   | PHE | 262 | -19.869 | 46.846 | 32.622 | 1.00 | 35.51 | 1DIK2045 |
| ATOM | 1954 | CB  | PHE | 262 | -19.685 | 44.280 | 34.621 | 1.00 | 24.44 | 1DIK2046 |
| ATOM | 1955 | CG  | PHE | 262 | -20.478 | 43.146 | 35.192 | 1.00 | 21.66 | 1DIK2047 |
| ATOM | 1956 | CD1 | PHE | 262 | -20.589 | 42.987 | 36.572 | 1.00 | 18.94 | 1DIK2048 |
| ATOM | 1957 | CD2 | PHE | 262 | -21.176 | 42.277 | 34.348 | 1.00 | 20.22 | 1DIK2049 |
| ATOM | 1958 | CE1 | PHE | 262 | -21.396 | 41.976 | 37.106 | 1.00 | 21.42 | 1DIK2050 |
| ATOM | 1959 | CE2 | PHE | 262 | -21.985 | 41.265 | 34.865 | 1.00 | 19.46 | 1DIK2051 |
| ATOM | 1960 | CZ  | PHE | 262 | -22.099 | 41.112 | 36.250 | 1.00 | 21.48 | 1DIK2052 |
| ATOM | 1961 | N   | THR | 263 | -18.881 | 47.428 | 34.564 | 1.00 | 30.27 | 1DIK2053 |
| ATOM | 1962 | CA  | THR | 263 | -18.113 | 48.502 | 33.967 | 1.00 | 29.94 | 1DIK2054 |
| ATOM | 1963 | C   | THR | 263 | -16.811 | 47.961 | 33.425 | 1.00 | 29.54 | 1DIK2055 |
| ATOM | 1964 | O   | THR | 263 | -16.466 | 46.805 | 33.671 | 1.00 | 31.34 | 1DIK2056 |
| ATOM | 1965 | CB  | THR | 263 | -17.860 | 49.648 | 34.985 | 1.00 | 32.12 | 1DIK2057 |
| ATOM | 1966 | OG1 | THR | 263 | -16.998 | 49.193 | 36.036 | 1.00 | 29.58 | 1DIK2058 |
| ATOM | 1967 | CG2 | THR | 263 | -19.183 | 50.112 | 35.589 | 1.00 | 22.67 | 1DIK2059 |
| ATOM | 1968 | N   | HIS | 264 | -16.087 | 48.802 | 32.693 | 1.00 | 30.02 | 1DIK2060 |



|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 1969 | CA  | HIS | 264 | -14.829 | 48.400 | 32.090 | 1.00 | 28.00 | 1DIK2061 |
| ATOM | 1970 | C   | HIS | 264 | -13.717 | 47.984 | 33.052 | 1.00 | 30.02 | 1DIK2062 |
| ATOM | 1971 | O   | HIS | 264 | -12.998 | 47.015 | 32.774 | 1.00 | 31.35 | 1DIK2063 |
| ATOM | 1972 | CB  | HIS | 264 | -14.314 | 49.480 | 31.143 | 1.00 | 27.91 | 1DIK2064 |
| ATOM | 1973 | CG  | HIS | 264 | -13.111 | 49.048 | 30.370 | 1.00 | 34.68 | 1DIK2065 |
| ATOM | 1974 | ND1 | HIS | 264 | -13.186 | 48.157 | 29.318 | 1.00 | 31.27 | 1DIK2066 |
| ATOM | 1975 | CD2 | HIS | 264 | -11.795 | 49.339 | 30.527 | 1.00 | 35.74 | 1DIK2067 |
| ATOM | 1976 | CE1 | HIS | 264 | -11.969 | 47.916 | 28.863 | 1.00 | 37.49 | 1DIK2068 |
| ATOM | 1977 | NE2 | HIS | 264 | -11.108 | 48.620 | 29.579 | 1.00 | 38.67 | 1DIK2069 |
| ATOM | 1978 | N   | ASP | 265 | -13.560 | 48.703 | 34.167 | 1.00 | 31.42 | 1DIK2070 |
| ATOM | 1979 | CA  | ASP | 265 | -12.533 | 48.371 | 35.172 | 1.00 | 29.27 | 1DIK2071 |
| ATOM | 1980 | C   | ASP | 265 | -12.831 | 47.030 | 35.859 | 1.00 | 27.71 | 1DIK2072 |
| ATOM | 1981 | O   | ASP | 265 | -11.923 | 46.352 | 36.346 | 1.00 | 25.15 | 1DIK2073 |
| ATOM | 1982 | CB  | ASP | 265 | -12.421 | 49.481 | 36.222 | 1.00 | 36.26 | 1DIK2074 |
| ATOM | 1983 | CG  | ASP | 265 | -13.745 | 49.764 | 36.921 | 1.00 | 44.48 | 1DIK2075 |
| ATOM | 1984 | OD1 | ASP | 265 | -14.671 | 50.307 | 36.267 | 1.00 | 43.98 | 1DIK2076 |
| ATOM | 1985 | OD2 | ASP | 265 | -13.860 | 49.441 | 38.128 | 1.00 | 49.77 | 1DIK2077 |
| ATOM | 1986 | N   | GLU | 266 | -14.108 | 46.651 | 35.896 | 1.00 | 26.27 | 1DIK2078 |
| ATOM | 1987 | CA  | GLU | 266 | -14.502 | 45.378 | 36.484 | 1.00 | 26.01 | 1DIK2079 |
| ATOM | 1988 | C   | GLU | 266 | -14.093 | 44.272 | 35.517 | 1.00 | 27.04 | 1DIK2080 |
| ATOM | 1989 | O   | GLU | 266 | -13.665 | 43.205 | 35.956 | 1.00 | 28.64 | 1DIK2081 |
| ATOM | 1990 | CB  | GLU | 266 | -15.997 | 45.359 | 36.785 | 1.00 | 24.19 | 1DIK2082 |
| ATOM | 1991 | CG  | GLU | 266 | -16.336 | 46.287 | 37.939 | 1.00 | 24.01 | 1DIK2083 |
| ATOM | 1992 | CD  | GLU | 266 | -17.824 | 46.521 | 38.139 | 1.00 | 28.94 | 1DIK2084 |
| ATOM | 1993 | OE1 | GLU | 266 | -18.647 | 46.091 | 37.299 | 1.00 | 30.18 | 1DIK2085 |
| ATOM | 1994 | OE2 | GLU | 266 | -18.175 | 47.150 | 39.160 | 1.00 | 32.29 | 1DIK2086 |
| ATOM | 1995 | N   | TRP | 267 | -14.207 | 44.521 | 34.210 | 1.00 | 24.96 | 1DIK2087 |
| ATOM | 1996 | CA  | TRP | 267 | -13.765 | 43.535 | 33.221 | 1.00 | 24.91 | 1DIK2088 |
| ATOM | 1997 | C   | TRP | 267 | -12.243 | 43.380 | 33.306 | 1.00 | 24.45 | 1DIK2089 |
| ATOM | 1998 | O   | TRP | 267 | -11.723 | 42.269 | 33.202 | 1.00 | 25.00 | 1DIK2090 |
| ATOM | 1999 | CB  | TRP | 267 | -14.210 | 43.915 | 31.801 | 1.00 | 22.45 | 1DIK2091 |
| ATOM | 2000 | CG  | TRP | 267 | -15.684 | 43.646 | 31.596 | 1.00 | 22.28 | 1DIK2092 |
| ATOM | 2001 | CD1 | TRP | 267 | -16.661 | 44.567 | 31.355 | 1.00 | 20.97 | 1DIK2093 |
| ATOM | 2002 | CD2 | TRP | 267 | -16.349 | 42.370 | 31.684 | 1.00 | 20.83 | 1DIK2094 |
| ATOM | 2003 | NE1 | TRP | 267 | -17.889 | 43.952 | 31.293 | 1.00 | 23.15 | 1DIK2095 |
| ATOM | 2004 | CE2 | TRP | 267 | -17.726 | 42.604 | 31.493 | 1.00 | 23.26 | 1DIK2096 |
| ATOM | 2005 | CE3 | TRP | 267 | -15.913 | 41.055 | 31.914 | 1.00 | 18.67 | 1DIK2097 |
| ATOM | 2006 | CZ2 | TRP | 267 | -18.672 | 41.569 | 31.529 | 1.00 | 22.56 | 1DIK2098 |
| ATOM | 2007 | CZ3 | TRP | 267 | -16.849 | 40.032 | 31.951 | 1.00 | 15.00 | 1DIK2099 |
| ATOM | 2008 | CH2 | TRP | 267 | -18.211 | 40.294 | 31.761 | 1.00 | 18.10 | 1DIK2100 |
| ATOM | 2009 | N   | ILE | 268 | -11.526 | 44.479 | 33.517 | 1.00 | 23.42 | 1DIK2101 |
| ATOM | 2010 | CA  | ILE | 268 | -10.073 | 44.399 | 33.647 | 1.00 | 25.35 | 1DIK2102 |
| ATOM | 2011 | C   | ILE | 268 | -9.721  | 43.461 | 34.801 | 1.00 | 27.88 | 1DIK2103 |
| ATOM | 2012 | O   | ILE | 268 | -8.776  | 42.673 | 34.714 | 1.00 | 28.12 | 1DIK2104 |
| ATOM | 2013 | CB  | ILE | 268 | -9.460  | 45.786 | 33.889 | 1.00 | 27.94 | 1DIK2105 |
| ATOM | 2014 | CG1 | ILE | 268 | -9.515  | 46.575 | 32.579 | 1.00 | 27.22 | 1DIK2106 |
| ATOM | 2015 | CG2 | ILE | 268 | -8.031  | 45.659 | 34.457 | 1.00 | 19.33 | 1DIK2107 |
| ATOM | 2016 | CD1 | ILE | 268 | -9.124  | 48.027 | 32.704 | 1.00 | 36.44 | 1DIK2108 |
| ATOM | 2017 | N   | ASN | 269 | -10.495 | 43.553 | 35.877 | 1.00 | 27.63 | 1DIK2109 |
| ATOM | 2018 | CA  | ASN | 269 | -10.290 | 42.704 | 37.039 | 1.00 | 27.33 | 1DIK2110 |
| ATOM | 2019 | C   | ASN | 269 | -10.656 | 41.259 | 36.739 | 1.00 | 26.62 | 1DIK2111 |
| ATOM | 2020 | O   | ASN | 269 | -9.918  | 40.348 | 37.108 | 1.00 | 27.01 | 1DIK2112 |
| ATOM | 2021 | CB  | ASN | 269 | -11.110 | 43.206 | 38.226 | 1.00 | 32.36 | 1DIK2113 |
| ATOM | 2022 | CG  | ASN | 269 | -10.427 | 44.332 | 38.966 | 1.00 | 32.62 | 1DIK2114 |
| ATOM | 2023 | OD1 | ASN | 269 | -9.287  | 44.208 | 39.423 | 1.00 | 29.54 | 1DIK2115 |
| ATOM | 2024 | ND2 | ASN | 269 | -11.120 | 45.443 | 39.088 | 1.00 | 38.68 | 1DIK2116 |
| ATOM | 2025 | N   | TYR | 270 | -11.794 | 41.052 | 36.075 | 1.00 | 22.76 | 1DIK2117 |
| ATOM | 2026 | CA  | TYR | 270 | -12.245 | 39.708 | 35.712 | 1.00 | 22.97 | 1DIK2118 |
| ATOM | 2027 | C   | TYR | 270 | -11.168 | 39.013 | 34.866 | 1.00 | 25.78 | 1DIK2119 |
| ATOM | 2028 | O   | TYR | 270 | -10.788 | 37.868 | 35.135 | 1.00 | 27.56 | 1DIK2120 |
| ATOM | 2029 | CB  | TYR | 270 | -13.559 | 39.800 | 34.934 | 1.00 | 22.99 | 1DIK2121 |
| ATOM | 2030 | CG  | TYR | 270 | -14.101 | 38.485 | 34.386 | 1.00 | 25.74 | 1DIK2122 |
| ATOM | 2031 | CD1 | TYR | 270 | -14.989 | 37.699 | 35.134 | 1.00 | 26.53 | 1DIK2123 |
| ATOM | 2032 | CD2 | TYR | 270 | -13.761 | 38.050 | 33.099 | 1.00 | 23.95 | 1DIK2124 |
| ATOM | 2033 | CE1 | TYR | 270 | -15.528 | 36.511 | 34.607 | 1.00 | 23.23 | 1DIK2125 |
| ATOM | 2034 | CE2 | TYR | 270 | -14.288 | 36.878 | 32.570 | 1.00 | 23.85 | 1DIK2126 |

FIG. 8-32

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 2035 | CZ  | TYR | 270 | -15.173 | 36.113 | 33.327 | 1.00 | 25.13 | 1DIK2127 |
| ATOM | 2036 | OH  | TYR | 270 | -15.705 | 34.964 | 32.790 | 1.00 | 23.62 | 1DIK2128 |
| ATOM | 2037 | N   | ASP | 271 | -10.678 | 39.714 | 33.847 | 1.00 | 23.05 | 1DIK2129 |
| ATOM | 2038 | CA  | ASP | 271 | -9.651  | 39.186 | 32.975 | 1.00 | 21.40 | 1DIK2130 |
| ATOM | 2039 | C   | ASP | 271 | -8.449  | 38.727 | 33.810 | 1.00 | 24.98 | 1DIK2131 |
| ATOM | 2040 | O   | ASP | 271 | -7.903  | 37.632 | 33.587 | 1.00 | 23.79 | 1DIK2132 |
| ATOM | 2041 | CB  | ASP | 271 | -9.214  | 40.259 | 31.972 | 1.00 | 19.82 | 1DIK2133 |
| ATOM | 2042 | CG  | ASP | 271 | -8.135  | 39.762 | 31.028 | 1.00 | 25.01 | 1DIK2134 |
| ATOM | 2043 | OD1 | ASP | 271 | -8.467  | 38.997 | 30.098 | 1.00 | 25.69 | 1DIK2135 |
| ATOM | 2044 | OD2 | ASP | 271 | -6.955  | 40.130 | 31.215 | 1.00 | 22.99 | 1DIK2136 |
| ATOM | 2045 | N   | TYR | 272 | -8.042  | 39.565 | 34.766 | 1.00 | 26.52 | 1DIK2137 |
| ATOM | 2046 | CA  | TYR | 272 | -6.912  | 39.257 | 35.627 | 1.00 | 24.36 | 1DIK2138 |
| ATOM | 2047 | C   | TYR | 272 | -7.201  | 38.031 | 36.498 | 1.00 | 25.48 | 1DIK2139 |
| ATOM | 2048 | O   | TYR | 272 | -6.308  | 37.209 | 36.738 | 1.00 | 27.60 | 1DIK2140 |
| ATOM | 2049 | CB  | TYR | 272 | -6.546  | 40.458 | 36.501 | 1.00 | 25.93 | 1DIK2141 |
| ATOM | 2050 | CG  | TYR | 272 | -5.236  | 40.246 | 37.210 | 1.00 | 24.39 | 1DIK2142 |
| ATOM | 2051 | CD1 | TYR | 272 | -4.042  | 40.250 | 36.495 | 1.00 | 24.69 | 1DIK2143 |
| ATOM | 2052 | CD2 | TYR | 272 | -5.186  | 40.001 | 38.587 | 1.00 | 24.58 | 1DIK2144 |
| ATOM | 2053 | CE1 | TYR | 272 | -2.825  | 40.014 | 37.120 | 1.00 | 24.93 | 1DIK2145 |
| ATOM | 2054 | CE2 | TYR | 272 | -3.970  | 39.762 | 39.230 | 1.00 | 23.27 | 1DIK2146 |
| ATOM | 2055 | CZ  | TYR | 272 | -2.794  | 39.770 | 38.482 | 1.00 | 25.13 | 1DIK2147 |
| ATOM | 2056 | OH  | TYR | 272 | -1.577  | 39.541 | 39.073 | 1.00 | 27.21 | 1DIK2148 |
| ATOM | 2057 | N   | LEU | 273 | -8.441  | 37.900 | 36.969 | 1.00 | 24.96 | 1DIK2149 |
| ATOM | 2058 | CA  | LEU | 273 | -8.834  | 36.743 | 37.778 | 1.00 | 24.02 | 1DIK2150 |
| ATOM | 2059 | C   | LEU | 273 | -8.624  | 35.455 | 36.964 | 1.00 | 25.27 | 1DIK2151 |
| ATOM | 2060 | O   | LEU | 273 | -8.159  | 34.454 | 37.503 | 1.00 | 29.71 | 1DIK2152 |
| ATOM | 2061 | CB  | LEU | 273 | -10.302 | 36.858 | 38.214 | 1.00 | 20.23 | 1DIK2153 |
| ATOM | 2062 | CG  | LEU | 273 | -10.976 | 35.622 | 38.826 | 1.00 | 23.41 | 1DIK2154 |
| ATOM | 2063 | CD1 | LEU | 273 | -10.254 | 35.191 | 40.104 | 1.00 | 20.60 | 1DIK2155 |
| ATOM | 2064 | CD2 | LEU | 273 | -12.440 | 35.922 | 39.108 | 1.00 | 17.70 | 1DIK2156 |
| ATOM | 2065 | N   | GLN | 274 | -8.962  | 35.478 | 35.672 | 1.00 | 23.99 | 1DIK2157 |
| ATOM | 2066 | CA  | GLN | 274 | -8.778  | 34.303 | 34.811 | 1.00 | 21.73 | 1DIK2158 |
| ATOM | 2067 | C   | GLN | 274 | -7.290  | 33.944 | 34.655 | 1.00 | 21.38 | 1DIK2159 |
| ATOM | 2068 | O   | GLN | 274 | -6.928  | 32.763 | 34.650 | 1.00 | 19.72 | 1DIK2160 |
| ATOM | 2069 | CB  | GLN | 274 | -9.415  | 34.530 | 33.442 | 1.00 | 20.31 | 1DIK2161 |
| ATOM | 2070 | CG  | GLN | 274 | -10.881 | 34.906 | 33.505 | 1.00 | 23.01 | 1DIK2162 |
| ATOM | 2071 | CD  | GLN | 274 | -11.710 | 34.017 | 34.424 | 1.00 | 25.47 | 1DIK2163 |
| ATOM | 2072 | OE1 | GLN | 274 | -11.536 | 32.805 | 34.477 | 1.00 | 23.72 | 1DIK2164 |
| ATOM | 2073 | NE2 | GLN | 274 | -12.622 | 34.629 | 35.154 | 1.00 | 32.39 | 1DIK2165 |
| ATOM | 2074 | N   | SER | 275 | -6.436  | 34.961 | 34.526 | 1.00 | 20.92 | 1DIK2166 |
| ATOM | 2075 | CA  | SER | 275 | -4.991  | 34.751 | 34.433 | 1.00 | 20.81 | 1DIK2167 |
| ATOM | 2076 | C   | SER | 275 | -4.472  | 34.099 | 35.725 | 1.00 | 24.14 | 1DIK2168 |
| ATOM | 2077 | O   | SER | 275 | -3.612  | 33.208 | 35.684 | 1.00 | 27.93 | 1DIK2169 |
| ATOM | 2078 | CB  | SER | 275 | -4.271  | 36.078 | 34.205 | 1.00 | 15.74 | 1DIK2170 |
| ATOM | 2079 | OG  | SER | 275 | -4.640  | 36.626 | 32.950 | 1.00 | 24.68 | 1DIK2171 |
| ATOM | 2080 | N   | LEU | 276 | -4.991  | 34.537 | 36.873 | 1.00 | 25.40 | 1DIK2172 |
| ATOM | 2081 | CA  | LEU | 276 | -4.571  | 33.969 | 38.157 | 1.00 | 25.08 | 1DIK2173 |
| ATOM | 2082 | C   | LEU | 276 | -4.956  | 32.500 | 38.259 | 1.00 | 22.91 | 1DIK2174 |
| ATOM | 2083 | O   | LEU | 276 | -4.132  | 31.675 | 38.619 | 1.00 | 24.12 | 1DIK2175 |
| ATOM | 2084 | CB  | LEU | 276 | -5.173  | 34.753 | 39.333 | 1.00 | 25.80 | 1DIK2176 |
| ATOM | 2085 | CG  | LEU | 276 | -4.558  | 36.123 | 39.596 | 1.00 | 23.07 | 1DIK2177 |
| ATOM | 2086 | CD1 | LEU | 276 | -5.418  | 36.893 | 40.560 | 1.00 | 23.03 | 1DIK2178 |
| ATOM | 2087 | CD2 | LEU | 276 | -3.158  | 35.948 | 40.144 | 1.00 | 24.41 | 1DIK2179 |
| ATOM | 2088 | N   | LYS | 277 | -6.204  | 32.174 | 37.943 | 1.00 | 24.32 | 1DIK2180 |
| ATOM | 2089 | CA  | LYS | 277 | -6.656  | 30.790 | 38.001 | 1.00 | 25.45 | 1DIK2181 |
| ATOM | 2090 | C   | LYS | 277 | -5.722  | 29.874 | 37.204 | 1.00 | 24.92 | 1DIK2182 |
| ATOM | 2091 | O   | LYS | 277 | -5.302  | 28.835 | 37.703 | 1.00 | 26.63 | 1DIK2183 |
| ATOM | 2092 | CB  | LYS | 277 | -8.049  | 30.647 | 37.417 | 1.00 | 26.65 | 1DIK2184 |
| ATOM | 2093 | CG  | LYS | 277 | -9.226  | 31.126 | 38.222 | 1.00 | 30.58 | 1DIK2185 |
| ATOM | 2094 | CD  | LYS | 277 | -10.424 | 30.639 | 37.399 | 1.00 | 36.27 | 1DIK2186 |
| ATOM | 2095 | CE  | LYS | 277 | -11.754 | 31.247 | 37.737 | 1.00 | 39.17 | 1DIK2187 |
| ATOM | 2096 | NZ  | LYS | 277 | -12.677 | 30.913 | 36.604 | 1.00 | 37.60 | 1DIK2188 |
| ATOM | 2097 | N   | LYS | 278 | -5.408  | 30.250 | 35.964 | 1.00 | 24.38 | 1DIK2189 |
| ATOM | 2098 | CA  | LYS | 278 | -4.523  | 29.440 | 35.111 | 1.00 | 24.41 | 1DIK2190 |
| ATOM | 2099 | C   | LYS | 278 | -3.073  | 29.414 | 35.598 | 1.00 | 24.27 | 1DIK2191 |
| ATOM | 2100 | O   | LYS | 278 | -2.429  | 28.360 | 35.590 | 1.00 | 24.08 | 1DIK2192 |



|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2101 | CB  | LYS | 278 | -4.544 | 29.948 | 33.658 | 1.00 | 23.48 | 1DIK2193 |
| ATOM | 2102 | CG  | LYS | 278 | -5.880 | 29.828 | 32.975 | 1.00 | 20.48 | 1DIK2194 |
| ATOM | 2103 | CD  | LYS | 278 | -6.423 | 28.428 | 33.097 | 1.00 | 19.64 | 1DIK2195 |
| ATOM | 2104 | CE  | LYS | 278 | -7.859 | 28.389 | 32.661 | 1.00 | 24.74 | 1DIK2196 |
| ATOM | 2105 | NZ  | LYS | 278 | -8.431 | 27.043 | 32.798 | 1.00 | 22.55 | 1DIK2197 |
| ATOM | 2106 | N   | TYR | 279 | -2.565 | 30.573 | 36.016 | 1.00 | 22.37 | 1DIK2198 |
| ATOM | 2107 | CA  | TYR | 279 | -1.194 | 30.686 | 36.488 | 1.00 | 22.48 | 1DIK2199 |
| ATOM | 2108 | C   | TYR | 279 | -0.880 | 29.887 | 37.749 | 1.00 | 24.45 | 1DIK2200 |
| ATOM | 2109 | O   | TYR | 279 | 0.165  | 29.237 | 37.826 | 1.00 | 25.51 | 1DIK2201 |
| ATOM | 2110 | CB  | TYR | 279 | -0.828 | 32.141 | 36.724 | 1.00 | 23.08 | 1DIK2202 |
| ATOM | 2111 | CG  | TYR | 279 | 0.618  | 32.318 | 37.123 | 1.00 | 25.86 | 1DIK2203 |
| ATOM | 2112 | CD1 | TYR | 279 | 1.631  | 32.222 | 36.179 | 1.00 | 21.81 | 1DIK2204 |
| ATOM | 2113 | CD2 | TYR | 279 | 0.973  | 32.570 | 38.452 | 1.00 | 24.65 | 1DIK2205 |
| ATOM | 2114 | CE1 | TYR | 279 | 2.956  | 32.368 | 36.540 | 1.00 | 26.71 | 1DIK2206 |
| ATOM | 2115 | CE2 | TYR | 279 | 2.294  | 32.718 | 38.824 | 1.00 | 21.38 | 1DIK2207 |
| ATOM | 2116 | CZ  | TYR | 279 | 3.281  | 32.616 | 37.863 | 1.00 | 25.91 | 1DIK2208 |
| ATOM | 2117 | OH  | TYR | 279 | 4.596  | 32.746 | 38.217 | 1.00 | 28.30 | 1DIK2209 |
| ATOM | 2118 | N   | TYR | 280 | -1.764 | 29.938 | 38.740 | 1.00 | 24.59 | 1DIK2210 |
| ATOM | 2119 | CA  | TYR | 280 | -1.536 | 29.208 | 39.981 | 1.00 | 26.07 | 1DIK2211 |
| ATOM | 2120 | C   | TYR | 280 | -2.136 | 27.822 | 39.951 | 1.00 | 26.49 | 1DIK2212 |
| ATOM | 2121 | O   | TYR | 280 | -1.889 | 27.011 | 40.845 | 1.00 | 28.70 | 1DIK2213 |
| ATOM | 2122 | CB  | TYR | 280 | -2.045 | 30.002 | 41.188 | 1.00 | 25.05 | 1DIK2214 |
| ATOM | 2123 | CG  | TYR | 280 | -1.148 | 31.180 | 41.507 | 1.00 | 28.69 | 1DIK2215 |
| ATOM | 2124 | CD1 | TYR | 280 | 0.047  | 30.997 | 42.214 | 1.00 | 24.61 | 1DIK2216 |
| ATOM | 2125 | CD2 | TYR | 280 | -1.466 | 32.475 | 41.065 | 1.00 | 27.52 | 1DIK2217 |
| ATOM | 2126 | CE1 | TYR | 280 | 0.911  | 32.069 | 42.466 | 1.00 | 25.31 | 1DIK2218 |
| ATOM | 2127 | CE2 | TYR | 280 | -0.608 | 33.556 | 41.313 | 1.00 | 28.66 | 1DIK2219 |
| ATOM | 2128 | CZ  | TYR | 280 | 0.578  | 33.342 | 42.011 | 1.00 | 28.71 | 1DIK2220 |
| ATOM | 2129 | OH  | TYR | 280 | 1.444  | 34.385 | 42.212 | 1.00 | 29.16 | 1DIK2221 |
| ATOM | 2130 | N   | GLY | 281 | -2.922 | 27.548 | 38.916 | 1.00 | 26.31 | 1DIK2222 |
| ATOM | 2131 | CA  | GLY | 281 | -3.530 | 26.240 | 38.780 | 1.00 | 22.80 | 1DIK2223 |
| ATOM | 2132 | C   | GLY | 281 | -2.680 | 25.285 | 37.960 | 1.00 | 25.18 | 1DIK2224 |
| ATOM | 2133 | O   | GLY | 281 | -2.512 | 24.122 | 38.342 | 1.00 | 29.22 | 1DIK2225 |
| ATOM | 2134 | N   | HIS | 282 | -2.141 | 25.771 | 36.841 | 1.00 | 22.24 | 1DIK2226 |
| ATOM | 2135 | CA  | HIS | 282 | -1.342 | 24.943 | 35.939 | 1.00 | 24.32 | 1DIK2227 |
| ATOM | 2136 | C   | HIS | 282 | -0.042 | 25.561 | 35.448 | 1.00 | 26.33 | 1DIK2228 |
| ATOM | 2137 | O   | HIS | 282 | 0.770  | 24.877 | 34.817 | 1.00 | 27.62 | 1DIK2229 |
| ATOM | 2138 | CB  | HIS | 282 | -2.190 | 24.543 | 34.733 | 1.00 | 21.27 | 1DIK2230 |
| ATOM | 2139 | CG  | HIS | 282 | -3.524 | 23.985 | 35.112 | 1.00 | 29.02 | 1DIK2231 |
| ATOM | 2140 | ND1 | HIS | 282 | -3.765 | 22.631 | 35.222 | 1.00 | 29.69 | 1DIK2232 |
| ATOM | 2141 | CD2 | HIS | 282 | -4.685 | 24.602 | 35.444 | 1.00 | 29.92 | 1DIK2233 |
| ATOM | 2142 | CE1 | HIS | 282 | -5.015 | 22.437 | 35.605 | 1.00 | 30.68 | 1DIK2234 |
| ATOM | 2143 | NE2 | HIS | 282 | -5.595 | 23.617 | 35.747 | 1.00 | 30.72 | 1DIK2235 |
| ATOM | 2144 | N   | GLY | 283 | 0.155  | 26.846 | 35.722 | 1.00 | 27.84 | 1DIK2236 |
| ATOM | 2145 | CA  | GLY | 283 | 1.370  | 27.508 | 35.292 | 1.00 | 26.80 | 1DIK2237 |
| ATOM | 2146 | C   | GLY | 283 | 2.436  | 27.399 | 36.365 | 1.00 | 30.11 | 1DIK2238 |
| ATOM | 2147 | O   | GLY | 283 | 2.324  | 26.566 | 37.272 | 1.00 | 26.73 | 1DIK2239 |
| ATOM | 2148 | N   | ALA | 284 | 3.461  | 28.249 | 36.259 | 1.00 | 31.03 | 1DIK2240 |
| ATOM | 2149 | CA  | ALA | 284 | 4.579  | 28.284 | 37.196 | 1.00 | 28.74 | 1DIK2241 |
| ATOM | 2150 | C   | ALA | 284 | 4.178  | 28.654 | 38.621 | 1.00 | 32.24 | 1DIK2242 |
| ATOM | 2151 | O   | ALA | 284 | 4.955  | 28.464 | 39.553 | 1.00 | 36.63 | 1DIK2243 |
| ATOM | 2152 | CB  | ALA | 284 | 5.626  | 29.240 | 36.702 | 1.00 | 26.23 | 1DIK2244 |
| ATOM | 2153 | N   | GLY | 285 | 2.974  | 29.182 | 38.800 | 1.00 | 31.80 | 1DIK2245 |
| ATOM | 2154 | CA  | GLY | 285 | 2.534  | 29.541 | 40.133 | 1.00 | 30.04 | 1DIK2246 |
| ATOM | 2155 | C   | GLY | 285 | 2.289  | 28.305 | 40.969 | 1.00 | 32.15 | 1DIK2247 |
| ATOM | 2156 | O   | GLY | 285 | 2.274  | 28.364 | 42.201 | 1.00 | 39.54 | 1DIK2248 |
| ATOM | 2157 | N   | ASN | 286 | 2.090  | 27.174 | 40.307 | 1.00 | 29.49 | 1DIK2249 |
| ATOM | 2158 | CA  | ASN | 286 | 1.844  | 25.921 | 41.001 | 1.00 | 26.41 | 1DIK2250 |
| ATOM | 2159 | C   | ASN | 286 | 3.140  | 25.106 | 41.045 | 1.00 | 28.02 | 1DIK2251 |
| ATOM | 2160 | O   | ASN | 286 | 3.825  | 24.958 | 40.031 | 1.00 | 29.27 | 1DIK2252 |
| ATOM | 2161 | CB  | ASN | 286 | 0.747  | 25.148 | 40.278 | 1.00 | 22.60 | 1DIK2253 |
| ATOM | 2162 | CG  | ASN | 286 | 0.176  | 24.038 | 41.118 | 1.00 | 25.66 | 1DIK2254 |
| ATOM | 2163 | OD1 | ASN | 286 | 0.822  | 23.009 | 41.330 | 1.00 | 27.94 | 1DIK2255 |
| ATOM | 2164 | ND2 | ASN | 286 | -1.039 | 24.236 | 41.611 | 1.00 | 22.58 | 1DIK2256 |
| ATOM | 2165 | N   | PRO | 287 | 3.506  | 24.576 | 42.225 | 1.00 | 30.51 | 1DIK2257 |
| ATOM | 2166 | CA  | PRO | 287 | 4.739  | 23.780 | 42.340 | 1.00 | 31.36 | 1DIK2258 |

|      |      |     |     |     |       |        |        |      |       |          |
|------|------|-----|-----|-----|-------|--------|--------|------|-------|----------|
| ATOM | 2167 | C   | PRO | 287 | 4.852 | 22.670 | 41.288 | 1.00 | 31.71 | 1DIK2259 |
| ATOM | 2168 | O   | PRO | 287 | 5.931 | 22.427 | 40.750 | 1.00 | 34.15 | 1DIK2260 |
| ATOM | 2169 | CB  | PRO | 287 | 4.658 | 23.221 | 43.762 | 1.00 | 29.15 | 1DIK2261 |
| ATOM | 2170 | CG  | PRO | 287 | 3.923 | 24.320 | 44.499 | 1.00 | 32.66 | 1DIK2262 |
| ATOM | 2171 | CD  | PRO | 287 | 2.821 | 24.691 | 43.527 | 1.00 | 29.14 | 1DIK2263 |
| ATOM | 2172 | N   | LEU | 288 | 3.741 | 22.000 | 40.992 | 1.00 | 31.66 | 1DIK2264 |
| ATOM | 2173 | CA  | LEU | 288 | 3.734 | 20.926 | 39.999 | 1.00 | 30.96 | 1DIK2265 |
| ATOM | 2174 | C   | LEU | 288 | 3.054 | 21.320 | 38.673 | 1.00 | 31.70 | 1DIK2266 |
| ATOM | 2175 | O   | LEU | 288 | 2.710 | 20.447 | 37.861 | 1.00 | 32.44 | 1DIK2267 |
| ATOM | 2176 | CB  | LEU | 288 | 3.071 | 19.673 | 40.584 | 1.00 | 27.59 | 1DIK2268 |
| ATOM | 2177 | CG  | LEU | 288 | 3.854 | 19.025 | 41.731 | 1.00 | 27.62 | 1DIK2269 |
| ATOM | 2178 | CD1 | LEU | 288 | 3.039 | 17.913 | 42.364 | 1.00 | 28.75 | 1DIK2270 |
| ATOM | 2179 | CD2 | LEU | 288 | 5.177 | 18.502 | 41.206 | 1.00 | 25.46 | 1DIK2271 |
| ATOM | 2180 | N   | GLY | 289 | 2.877 | 22.626 | 38.458 | 1.00 | 29.27 | 1DIK2272 |
| ATOM | 2181 | CA  | GLY | 289 | 2.240 | 23.121 | 37.245 | 1.00 | 28.87 | 1DIK2273 |
| ATOM | 2182 | C   | GLY | 289 | 3.038 | 22.806 | 35.990 | 1.00 | 28.45 | 1DIK2274 |
| ATOM | 2183 | O   | GLY | 289 | 2.591 | 22.015 | 35.152 | 1.00 | 25.00 | 1DIK2275 |
| ATOM | 2184 | N   | PRO | 290 | 4.227 | 23.414 | 35.827 | 1.00 | 26.67 | 1DIK2276 |
| ATOM | 2185 | CA  | PRO | 290 | 5.075 | 23.169 | 34.654 | 1.00 | 27.05 | 1DIK2277 |
| ATOM | 2186 | C   | PRO | 290 | 5.420 | 21.667 | 34.473 | 1.00 | 27.87 | 1DIK2278 |
| ATOM | 2187 | O   | PRO | 290 | 5.590 | 21.194 | 33.349 | 1.00 | 28.39 | 1DIK2279 |
| ATOM | 2188 | CB  | PRO | 290 | 6.312 | 24.034 | 34.945 | 1.00 | 25.95 | 1DIK2280 |
| ATOM | 2189 | CG  | PRO | 290 | 5.756 | 25.161 | 35.778 | 1.00 | 22.17 | 1DIK2281 |
| ATOM | 2190 | CD  | PRO | 290 | 4.851 | 24.402 | 36.728 | 1.00 | 24.69 | 1DIK2282 |
| ATOM | 2191 | N   | THR | 291 | 5.521 | 20.925 | 35.576 | 1.00 | 28.55 | 1DIK2283 |
| ATOM | 2192 | CA  | THR | 291 | 5.807 | 19.495 | 35.525 | 1.00 | 23.19 | 1DIK2284 |
| ATOM | 2193 | C   | THR | 291 | 4.778 | 18.742 | 34.668 | 1.00 | 23.08 | 1DIK2285 |
| ATOM | 2194 | O   | THR | 291 | 5.106 | 17.718 | 34.067 | 1.00 | 23.15 | 1DIK2286 |
| ATOM | 2195 | CB  | THR | 291 | 5.862 | 18.902 | 36.958 | 1.00 | 21.42 | 1DIK2287 |
| ATOM | 2196 | OG1 | THR | 291 | 7.129 | 19.213 | 37.530 | 1.00 | 19.92 | 1DIK2288 |
| ATOM | 2197 | CG2 | THR | 291 | 5.684 | 17.395 | 36.968 | 1.00 | 14.25 | 1DIK2289 |
| ATOM | 2197 | N   | GLN | 292 | 3.543 | 19.243 | 34.599 | 1.00 | 22.57 | 1DIK2290 |
| ATOM | 2198 | CA  | GLN | 292 | 2.509 | 18.584 | 33.791 | 1.00 | 21.65 | 1DIK2291 |
| ATOM | 2199 | C   | GLN | 292 | 2.805 | 18.650 | 32.283 | 1.00 | 19.91 | 1DIK2292 |
| ATOM | 2201 | O   | GLN | 292 | 2.227 | 17.904 | 31.494 | 1.00 | 23.11 | 1DIK2293 |
| ATOM | 2202 | CB  | GLN | 292 | 1.119 | 19.190 | 34.046 | 1.00 | 18.92 | 1DIK2294 |
| ATOM | 2203 | CG  | GLN | 292 | 0.656 | 19.202 | 35.487 | 1.00 | 23.26 | 1DIK2295 |
| ATOM | 2204 | CD  | GLN | 292 | 0.821 | 17.867 | 36.187 | 1.00 | 24.01 | 1DIK2296 |
| ATOM | 2205 | OE1 | GLN | 292 | 0.122 | 16.902 | 35.892 | 1.00 | 25.86 | 1DIK2297 |
| ATOM | 2206 | NE2 | GLN | 292 | 1.752 | 17.809 | 37.127 | 1.00 | 26.50 | 1DIK2298 |
| ATOM | 2207 | N   | GLY | 293 | 3.709 | 19.528 | 31.879 | 1.00 | 17.82 | 1DIK2299 |
| ATOM | 2208 | CA  | GLY | 293 | 3.993 | 19.650 | 30.472 | 1.00 | 17.52 | 1DIK2300 |
| ATOM | 2209 | C   | GLY | 293 | 5.284 | 19.050 | 29.990 | 1.00 | 21.21 | 1DIK2301 |
| ATOM | 2210 | O   | GLY | 293 | 5.581 | 19.184 | 28.799 | 1.00 | 23.37 | 1DIK2302 |
| ATOM | 2211 | N   | VAL | 294 | 6.054 | 18.391 | 30.859 | 1.00 | 19.02 | 1DIK2303 |
| ATOM | 2212 | CA  | VAL | 294 | 7.329 | 17.838 | 30.403 | 1.00 | 17.89 | 1DIK2304 |
| ATOM | 2213 | C   | VAL | 294 | 7.202 | 16.680 | 29.426 | 1.00 | 18.74 | 1DIK2305 |
| ATOM | 2214 | O   | VAL | 294 | 8.009 | 16.588 | 28.495 | 1.00 | 25.27 | 1DIK2306 |
| ATOM | 2215 | CB  | VAL | 294 | 8.292 | 17.477 | 31.558 | 1.00 | 18.75 | 1DIK2307 |
| ATOM | 2216 | CG1 | VAL | 294 | 8.596 | 18.722 | 32.382 | 1.00 | 19.92 | 1DIK2308 |
| ATOM | 2217 | CG2 | VAL | 294 | 7.707 | 16.415 | 32.425 | 1.00 | 24.87 | 1DIK2309 |
| ATOM | 2218 | N   | GLY | 295 | 6.205 | 15.815 | 26.609 | 1.00 | 17.01 | 1DIK2310 |
| ATOM | 2219 | CA  | GLY | 295 | 6.003 | 14.701 | 28.692 | 1.00 | 16.78 | 1DIK2311 |
| ATOM | 2220 | C   | GLY | 295 | 5.870 | 15.193 | 27.258 | 1.00 | 21.51 | 1DIK2312 |
| ATOM | 2221 | O   | GLY | 295 | 6.561 | 14.697 | 26.345 | 1.00 | 20.80 | 1DIK2313 |
| ATOM | 2222 | N   | TYR | 296 | 4.988 | 16.177 | 27.055 | 1.00 | 16.60 | 1DIK2314 |
| ATOM | 2223 | CA  | TYR | 296 | 4.780 | 16.767 | 25.739 | 1.00 | 16.58 | 1DIK2315 |
| ATOM | 2224 | C   | TYR | 296 | 6.063 | 17.410 | 25.193 | 1.00 | 20.08 | 1DIK2316 |
| ATOM | 2225 | O   | TYR | 296 | 6.371 | 17.314 | 23.996 | 1.00 | 20.96 | 1DIK2317 |
| ATOM | 2226 | CB  | TYR | 296 | 3.686 | 17.823 | 25.803 | 1.00 | 17.05 | 1DIK2318 |
| ATOM | 2227 | CG  | TYR | 296 | 3.273 | 18.295 | 24.437 | 1.00 | 16.86 | 1DIK2319 |
| ATOM | 2228 | CD1 | TYR | 296 | 2.388 | 17.541 | 23.676 | 1.00 | 17.02 | 1DIK2320 |
| ATOM | 2229 | CD2 | TYR | 296 | 3.774 | 19.483 | 23.896 | 1.00 | 15.90 | 1DIK2321 |
| ATOM | 2230 | CE1 | TYR | 296 | 2.006 | 17.942 | 22.418 | 1.00 | 16.51 | 1DIK2322 |
| ATOM | 2231 | CE2 | TYR | 296 | 3.399 | 19.897 | 22.637 | 1.00 | 17.02 | 1DIK2323 |
| ATOM | 2232 | CZ  | TYR | 296 | 2.510 | 19.117 | 21.899 | 1.00 | 20.60 | 1DIK2324 |

FIG. 8-35

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2233 | OH  | TYR | 296 | 2.101  | 19.495 | 20.640 | 1.00 | 22.06 | 1DIK2325 |
| ATOM | 2234 | N   | ALA | 297 | 6.798  | 18.076 | 26.081 | 1.00 | 20.78 | 1DIK2326 |
| ATOM | 2235 | CA  | ALA | 297 | 8.054  | 18.726 | 25.730 | 1.00 | 20.65 | 1DIK2327 |
| ATOM | 2236 | C   | ALA | 297 | 9.079  | 17.698 | 25.239 | 1.00 | 18.75 | 1DIK2328 |
| ATOM | 2237 | O   | ALA | 297 | 9.795  | 17.942 | 24.267 | 1.00 | 20.26 | 1DIK2329 |
| ATOM | 2238 | CB  | ALA | 297 | 8.599  | 19.487 | 26.934 | 1.00 | 20.11 | 1DIK2330 |
| ATOM | 2239 | N   | ASN | 298 | 9.156  | 16.549 | 25.904 | 1.00 | 14.67 | 1DIK2331 |
| ATOM | 2240 | CA  | ASN | 298 | 10.088 | 15.507 | 25.479 | 1.00 | 15.91 | 1DIK2332 |
| ATOM | 2241 | C   | ASN | 298 | 9.656  | 14.898 | 24.146 | 1.00 | 17.04 | 1DIK2333 |
| ATOM | 2242 | O   | ASN | 298 | 10.498 | 14.429 | 23.373 | 1.00 | 18.62 | 1DIK2334 |
| ATOM | 2243 | CB  | ASN | 298 | 10.226 | 14.433 | 26.553 | 1.00 | 16.51 | 1DIK2335 |
| ATOM | 2244 | CG  | ASN | 298 | 11.093 | 14.888 | 27.702 | 1.00 | 19.39 | 1DIK2336 |
| ATOM | 2245 | OD1 | ASN | 298 | 12.127 | 15.533 | 27.494 | 1.00 | 18.34 | 1DIK2337 |
| ATOM | 2246 | ND2 | ASN | 298 | 10.686 | 14.559 | 28.919 | 1.00 | 10.95 | 1DIK2338 |
| ATOM | 2247 | N   | GLU | 299 | 8.348  | 14.900 | 23.879 | 1.00 | 18.29 | 1DIK2339 |
| ATOM | 2248 | CA  | GLU | 299 | 7.828  | 14.403 | 22.608 | 1.00 | 20.08 | 1DIK2340 |
| ATOM | 2249 | C   | GLU | 299 | 8.214  | 15.404 | 21.515 | 1.00 | 19.66 | 1DIK2341 |
| ATOM | 2250 | O   | GLU | 299 | 8.519  | 15.012 | 20.385 | 1.00 | 18.23 | 1DIK2342 |
| ATOM | 2251 | CB  | GLU | 299 | 6.309  | 14.226 | 22.649 | 1.00 | 17.35 | 1DIK2343 |
| ATOM | 2252 | CG  | GLU | 299 | 5.877  | 13.046 | 23.478 | 1.00 | 20.50 | 1DIK2344 |
| ATOM | 2253 | CD  | GLU | 299 | 4.383  | 12.754 | 23.393 | 1.00 | 24.46 | 1DIK2345 |
| ATOM | 2254 | OE1 | GLU | 299 | 3.576  | 13.690 | 23.181 | 1.00 | 17.82 | 1DIK2346 |
| ATOM | 2255 | OE2 | GLU | 299 | 4.013  | 11.572 | 23.542 | 1.00 | 22.37 | 1DIK2347 |
| ATOM | 2256 | N   | LEU | 300 | 8.206  | 16.693 | 21.859 | 1.00 | 19.59 | 1DIK2348 |
| ATOM | 2257 | CA  | LEU | 300 | 8.596  | 17.739 | 20.917 | 1.00 | 20.13 | 1DIK2349 |
| ATOM | 2258 | C   | LEU | 300 | 10.095 | 17.600 | 20.593 | 1.00 | 20.28 | 1DIK2350 |
| ATOM | 2259 | O   | LEU | 300 | 10.487 | 17.665 | 19.422 | 1.00 | 22.61 | 1DIK2351 |
| ATOM | 2260 | CB  | LEU | 300 | 8.289  | 19.125 | 21.488 | 1.00 | 21.25 | 1DIK2352 |
| ATOM | 2261 | CG  | LEU | 300 | 8.649  | 20.287 | 20.559 | 1.00 | 24.96 | 1DIK2353 |
| ATOM | 2262 | CD1 | LEU | 300 | 7.930  | 20.151 | 19.230 | 1.00 | 24.02 | 1DIK2354 |
| ATOM | 2263 | CD2 | LEU | 300 | 8.269  | 21.578 | 21.219 | 1.00 | 16.85 | 1DIK2355 |
| ATOM | 2264 | N   | ILE | 301 | 10.926 | 17.400 | 21.624 | 1.00 | 18.80 | 1DIK2356 |
| ATOM | 2265 | CA  | ILE | 301 | 12.373 | 17.213 | 21.444 | 1.00 | 15.04 | 1DIK2357 |
| ATOM | 2266 | C   | ILE | 301 | 12.587 | 16.017 | 20.484 | 1.00 | 20.56 | 1DIK2358 |
| ATOM | 2267 | O   | ILE | 301 | 13.429 | 16.056 | 19.575 | 1.00 | 18.58 | 1DIK2359 |
| ATOM | 2268 | CB  | ILE | 301 | 13.059 | 16.937 | 22.812 | 1.00 | 16.02 | 1DIK2360 |
| ATOM | 2269 | CG1 | ILE | 301 | 13.004 | 18.194 | 23.686 | 1.00 | 17.32 | 1DIK2361 |
| ATOM | 2270 | CG2 | ILE | 301 | 14.498 | 16.487 | 22.626 | 1.00 | 6.56  | 1DIK2362 |
| ATOM | 2271 | CD1 | ILE | 301 | 13.594 | 18.005 | 25.064 | 1.00 | 14.26 | 1DIK2363 |
| ATOM | 2272 | N   | ALA | 302 | 11.806 | 14.958 | 20.685 | 1.00 | 20.02 | 1DIK2364 |
| ATOM | 2273 | CA  | ALA | 302 | 11.891 | 13.776 | 19.840 | 1.00 | 20.23 | 1DIK2365 |
| ATOM | 2274 | C   | ALA | 302 | 11.610 | 14.139 | 18.375 | 1.00 | 21.81 | 1DIK2366 |
| ATOM | 2275 | O   | ALA | 302 | 12.326 | 13.708 | 17.470 | 1.00 | 19.81 | 1DIK2367 |
| ATOM | 2276 | CB  | ALA | 302 | 10.912 | 12.718 | 20.327 | 1.00 | 20.45 | 1DIK2368 |
| ATOM | 2277 | N   | ARG | 303 | 10.577 | 14.943 | 18.138 | 1.00 | 20.13 | 1DIK2369 |
| ATOM | 2278 | CA  | ARG | 303 | 10.227 | 15.329 | 16.774 | 1.00 | 17.34 | 1DIK2370 |
| ATOM | 2279 | C   | ARG | 303 | 11.245 | 16.267 | 16.093 | 1.00 | 19.34 | 1DIK2371 |
| ATOM | 2280 | O   | ARG | 303 | 11.569 | 16.095 | 14.907 | 1.00 | 15.37 | 1DIK2372 |
| ATOM | 2281 | CB  | ARG | 303 | 8.816  | 15.934 | 16.750 | 1.00 | 15.85 | 1DIK2373 |
| ATOM | 2282 | CG  | ARG | 303 | 7.715  | 14.914 | 17.021 | 1.00 | 12.30 | 1DIK2374 |
| ATOM | 2283 | CD  | ARG | 303 | 6.353  | 15.572 | 17.215 | 1.00 | 11.98 | 1DIK2375 |
| ATOM | 2284 | NE  | ARG | 303 | 5.287  | 14.572 | 17.315 | 1.00 | 11.60 | 1DIK2376 |
| ATOM | 2285 | CZ  | ARG | 303 | 3.989  | 14.836 | 17.456 | 1.00 | 15.17 | 1DIK2377 |
| ATOM | 2286 | NH1 | ARG | 303 | 3.538  | 16.088 | 17.540 | 1.00 | 11.46 | 1DIK2378 |
| ATOM | 2287 | NH2 | ARG | 303 | 3.132  | 13.830 | 17.519 | 1.00 | 15.32 | 1DIK2379 |
| ATOM | 2288 | N   | LEU | 304 | 11.752 | 17.247 | 16.838 | 1.00 | 16.06 | 1DIK2380 |
| ATOM | 2289 | CA  | LEU | 304 | 12.722 | 18.188 | 16.289 | 1.00 | 18.27 | 1DIK2381 |
| ATOM | 2290 | C   | LEU | 304 | 14.026 | 17.480 | 15.922 | 1.00 | 20.93 | 1DIK2382 |
| ATOM | 2291 | O   | LEU | 304 | 14.638 | 17.772 | 14.897 | 1.00 | 23.62 | 1DIK2383 |
| ATOM | 2292 | CB  | LEU | 304 | 13.020 | 19.309 | 17.292 | 1.00 | 12.77 | 1DIK2384 |
| ATOM | 2293 | CG  | LEU | 304 | 11.882 | 20.262 | 17.643 | 1.00 | 20.49 | 1DIK2385 |
| ATOM | 2294 | CD1 | LEU | 304 | 12.289 | 21.157 | 18.805 | 1.00 | 17.27 | 1DIK2386 |
| ATOM | 2295 | CD2 | LEU | 304 | 11.509 | 21.083 | 16.416 | 1.00 | 22.28 | 1DIK2387 |
| ATOM | 2296 | N   | THR | 305 | 14.450 | 16.546 | 16.763 | 1.00 | 21.43 | 1DIK2388 |
| ATOM | 2297 | CA  | THR | 305 | 15.686 | 15.823 | 16.518 | 1.00 | 22.45 | 1DIK2389 |
| ATOM | 2298 | C   | THR | 305 | 15.510 | 14.475 | 15.803 | 1.00 | 23.67 | 1DIK2390 |

FIG. 8-36

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2299 | O   | THR | 305 | 16.491 | 13.788 | 15.552 | 1.00 | 25.10 | 1DIK2391 |
| ATOM | 2300 | CB  | THR | 305 | 16.429 | 15.589 | 17.843 | 1.00 | 21.99 | 1DIK2392 |
| ATOM | 2301 | OG1 | THR | 305 | 15.622 | 14.782 | 18.711 | 1.00 | 26.81 | 1DIK2393 |
| ATOM | 2302 | CG2 | THR | 305 | 16.712 | 16.906 | 18.530 | 1.00 | 16.41 | 1DIK2394 |
| ATOM | 2303 | N   | HIS | 306 | 14.276 | 14.100 | 15.476 | 1.00 | 24.74 | 1DIK2395 |
| ATOM | 2304 | CA  | HIS | 306 | 13.982 | 12.815 | 14.815 | 1.00 | 28.44 | 1DIK2396 |
| ATOM | 2305 | C   | HIS | 306 | 14.566 | 11.628 | 15.600 | 1.00 | 27.46 | 1DIK2397 |
| ATOM | 2306 | O   | HIS | 306 | 15.122 | 10.704 | 15.012 | 1.00 | 33.56 | 1DIK2398 |
| ATOM | 2307 | CB  | HIS | 306 | 14.519 | 12.796 | 13.374 | 1.00 | 27.83 | 1DIK2399 |
| ATOM | 2308 | CG  | HIS | 306 | 14.236 | 14.053 | 12.613 | 1.00 | 33.95 | 1DIK2400 |
| ATOM | 2309 | ND1 | HIS | 306 | 12.959 | 14.447 | 12.268 | 1.00 | 35.48 | 1DIK2401 |
| ATOM | 2310 | CD2 | HIS | 306 | 15.065 | 15.022 | 12.155 | 1.00 | 32.87 | 1DIK2402 |
| ATOM | 2311 | CE1 | HIS | 306 | 13.013 | 15.604 | 11.633 | 1.00 | 35.66 | 1DIK2403 |
| ATOM | 2312 | NE2 | HIS | 306 | 14.280 | 15.974 | 11.552 | 1.00 | 35.02 | 1DIK2404 |
| ATOM | 2313 | N   | SER | 307 | 14.429 | 11.654 | 16.919 | 1.00 | 22.90 | 1DIK2405 |
| ATOM | 2314 | CA  | SER | 307 | 14.956 | 10.606 | 17.779 | 1.00 | 24.39 | 1DIK2406 |
| ATOM | 2315 | C   | SER | 307 | 13.858 | 10.081 | 18.684 | 1.00 | 27.25 | 1DIK2407 |
| ATOM | 2316 | O   | SER | 307 | 12.864 | 10.768 | 18.920 | 1.00 | 31.56 | 1DIK2408 |
| ATOM | 2317 | CB  | SER | 307 | 16.050 | 11.175 | 18.662 | 1.00 | 22.96 | 1DIK2409 |
| ATOM | 2318 | OG  | SER | 307 | 16.779 | 12.147 | 17.948 | 1.00 | 39.77 | 1DIK2410 |
| ATOM | 2319 | N   | PRO | 308 | 14.014 | 8.845  | 19.201 | 1.00 | 28.75 | 1DIK2411 |
| ATOM | 2320 | CA  | PRO | 308 | 13.004 | 8.260  | 20.094 | 1.00 | 26.08 | 1DIK2412 |
| ATOM | 2321 | C   | PRO | 308 | 12.764 | 9.127  | 21.322 | 1.00 | 23.85 | 1DIK2413 |
| ATOM | 2322 | O   | PRO | 308 | 13.614 | 9.921  | 21.711 | 1.00 | 22.93 | 1DIK2414 |
| ATOM | 2323 | CB  | PRO | 308 | 13.609 | 6.899  | 20.450 | 1.00 | 25.36 | 1DIK2415 |
| ATOM | 2324 | CG  | PRO | 308 | 14.416 | 6.567  | 19.204 | 1.00 | 24.66 | 1DIK2416 |
| ATOM | 2325 | CD  | PRO | 308 | 15.109 | 7.886  | 18.963 | 1.00 | 25.37 | 1DIK2417 |
| ATOM | 2326 | N   | VAL | 309 | 11.601 | 8.968  | 21.932 | 1.00 | 25.92 | 1DIK2418 |
| ATOM | 2327 | CA  | VAL | 309 | 11.250 | 9.744  | 23.105 | 1.00 | 23.97 | 1DIK2419 |
| ATOM | 2328 | C   | VAL | 309 | 11.959 | 9.207  | 24.348 | 1.00 | 28.96 | 1DIK2420 |
| ATOM | 2329 | O   | VAL | 309 | 12.050 | 7.990  | 24.554 | 1.00 | 28.02 | 1DIK2421 |
| ATOM | 2330 | CB  | VAL | 309 | 9.725  | 9.692  | 23.367 | 1.00 | 19.99 | 1DIK2422 |
| ATOM | 2331 | CG1 | VAL | 309 | 9.351  | 10.630 | 24.506 | 1.00 | 14.96 | 1DIK2423 |
| ATOM | 2332 | CG2 | VAL | 309 | 8.963  | 10.053 | 22.112 | 1.00 | 21.23 | 1DIK2424 |
| ATOM | 2333 | N   | HIS | 310 | 12.480 | 10.118 | 25.166 | 1.00 | 32.25 | 1DIK2425 |
| ATOM | 2334 | CA  | HIS | 310 | 13.101 | 9.751  | 26.433 | 1.00 | 30.63 | 1DIK2426 |
| ATOM | 2335 | C   | HIS | 310 | 12.270 | 10.503 | 27.447 | 1.00 | 28.25 | 1DIK2427 |
| ATOM | 2336 | O   | HIS | 310 | 12.459 | 11.699 | 27.668 | 1.00 | 29.12 | 1DIK2428 |
| ATOM | 2337 | CB  | HIS | 310 | 14.573 | 10.160 | 26.502 | 1.00 | 35.26 | 1DIK2429 |
| ATOM | 2338 | CG  | HIS | 310 | 15.477 | 9.219  | 25.772 | 1.00 | 46.85 | 1DIK2430 |
| ATOM | 2339 | ND1 | HIS | 310 | 15.732 | 9.329  | 24.418 | 1.00 | 53.75 | 1DIK2431 |
| ATOM | 2340 | CD2 | HIS | 310 | 16.148 | 8.117  | 26.191 | 1.00 | 52.66 | 1DIK2432 |
| ATOM | 2341 | CE1 | HIS | 310 | 16.517 | 8.339  | 24.032 | 1.00 | 54.18 | 1DIK2433 |
| ATOM | 2342 | NE2 | HIS | 310 | 16.784 | 7.588  | 25.089 | 1.00 | 57.76 | 1DIK2434 |
| ATOM | 2343 | N   | ASP | 311 | 11.326 | 9.795  | 28.047 | 1.00 | 25.80 | 1DIK2435 |
| ATOM | 2344 | CA  | ASP | 311 | 10.450 | 10.404 | 29.019 | 1.00 | 24.79 | 1DIK2436 |
| ATOM | 2345 | C   | ASP | 311 | 9.947  | 9.348  | 29.959 | 1.00 | 26.98 | 1DIK2437 |
| ATOM | 2346 | O   | ASP | 311 | 9.707  | 8.212  | 29.564 | 1.00 | 29.31 | 1DIK2438 |
| ATOM | 2347 | CB  | ASP | 311 | 9.257  | 11.064 | 28.317 | 1.00 | 25.99 | 1DIK2439 |
| ATOM | 2348 | CG  | ASP | 311 | 8.239  | 11.619 | 29.292 | 1.00 | 24.92 | 1DIK2440 |
| ATOM | 2349 | OD1 | ASP | 311 | 8.498  | 12.703 | 29.844 | 1.00 | 24.37 | 1DIK2441 |
| ATOM | 2350 | OD2 | ASP | 311 | 7.184  | 10.982 | 29.512 | 1.00 | 21.07 | 1DIK2442 |
| ATOM | 2351 | N   | ASP | 312 | 9.779  | 9.740  | 31.210 | 1.00 | 29.33 | 1DIK2443 |
| ATOM | 2352 | CA  | ASP | 312 | 9.269  | 8.849  | 32.217 | 1.00 | 29.81 | 1DIK2444 |
| ATOM | 2353 | C   | ASP | 312 | 8.262  | 9.626  | 33.072 | 1.00 | 32.06 | 1DIK2445 |
| ATOM | 2354 | O   | ASP | 312 | 8.201  | 9.465  | 34.294 | 1.00 | 33.19 | 1DIK2446 |
| ATOM | 2355 | CB  | ASP | 312 | 10.422 | 8.309  | 33.061 | 1.00 | 32.29 | 1DIK2447 |
| ATOM | 2356 | CG  | ASP | 312 | 10.034 | 7.062  | 33.861 | 1.00 | 40.96 | 1DIK2448 |
| ATOM | 2357 | OD1 | ASP | 312 | 8.902  | 6.523  | 33.695 | 1.00 | 37.90 | 1DIK2449 |
| ATOM | 2358 | OD2 | ASP | 312 | 10.882 | 6.616  | 34.668 | 1.00 | 46.83 | 1DIK2450 |
| ATOM | 2359 | N   | THR | 313 | 7.470  | 10.475 | 32.424 | 1.00 | 28.45 | 1DIK2451 |
| ATOM | 2360 | CA  | THR | 313 | 6.472  | 11.250 | 33.143 | 1.00 | 26.99 | 1DIK2452 |
| ATOM | 2361 | C   | THR | 313 | 5.040  | 10.924 | 32.685 | 1.00 | 27.21 | 1DIK2453 |
| ATOM | 2362 | O   | THR | 313 | 4.455  | 9.940  | 33.145 | 1.00 | 25.95 | 1DIK2454 |
| ATOM | 2363 | CB  | THR | 313 | 6.762  | 12.771 | 33.043 | 1.00 | 27.49 | 1DIK2455 |
| ATOM | 2364 | OG1 | THR | 313 | 6.694  | 13.193 | 31.671 | 1.00 | 21.29 | 1DIK2456 |

FIG. 8-37

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2365 | CG2 | THR | 313 | 8.164  | 13.075 | 33.597 | 1.00 | 23.59 | 1DIK2457 |
| ATOM | 2366 | N   | SER | 314 | 4.476  | 11.726 | 31.785 | 1.00 | 24.25 | 1DIK2458 |
| ATOM | 2367 | CA  | SER | 314 | 3.105  | 11.510 | 31.326 | 1.00 | 20.48 | 1DIK2459 |
| ATOM | 2368 | C   | SER | 314 | 2.936  | 10.702 | 30.042 | 1.00 | 20.74 | 1DIK2460 |
| ATOM | 2369 | O   | SER | 314 | 1.821  | 10.289 | 29.712 | 1.00 | 20.71 | 1DIK2461 |
| ATOM | 2370 | CB  | SER | 314 | 2.409  | 12.867 | 31.160 | 1.00 | 20.21 | 1DIK2462 |
| ATOM | 2371 | OG  | SER | 314 | 3.137  | 13.722 | 30.286 | 1.00 | 23.16 | 1DIK2463 |
| ATOM | 2372 | N   | SER | 315 | 4.028  | 10.468 | 29.317 | 1.00 | 21.85 | 1DIK2464 |
| ATOM | 2373 | CA  | SER | 315 | 3.923  | 9.757  | 28.055 | 1.00 | 20.97 | 1DIK2465 |
| ATOM | 2374 | C   | SER | 315 | 3.568  | 8.288  | 28.141 | 1.00 | 23.67 | 1DIK2466 |
| ATOM | 2375 | O   | SER | 315 | 3.890  | 7.593  | 29.111 | 1.00 | 26.91 | 1DIK2467 |
| ATOM | 2376 | CB  | SER | 315 | 5.187  | 9.953  | 27.200 | 1.00 | 18.40 | 1DIK2468 |
| ATOM | 2377 | OG  | SER | 315 | 6.313  | 9.245  | 27.685 | 1.00 | 18.66 | 1DIK2469 |
| ATOM | 2378 | N   | ASN | 316 | 2.885  | 7.830  | 27.102 | 1.00 | 23.83 | 1DIK2470 |
| ATOM | 2379 | CA  | ASN | 316 | 2.489  | 6.440  | 26.964 | 1.00 | 24.79 | 1DIK2471 |
| ATOM | 2380 | C   | ASN | 316 | 3.689  | 5.793  | 26.225 | 1.00 | 23.66 | 1DIK2472 |
| ATOM | 2381 | O   | ASN | 316 | 3.929  | 6.088  | 25.047 | 1.00 | 24.08 | 1DIK2473 |
| ATOM | 2382 | CB  | ASN | 316 | 1.205  | 6.394  | 26.130 | 1.00 | 24.17 | 1DIK2474 |
| ATOM | 2383 | CG  | ASN | 316 | 0.621  | 5.012  | 26.011 | 1.00 | 20.87 | 1DIK2475 |
| ATOM | 2384 | OD1 | ASN | 316 | 1.331  | 4.026  | 25.849 | 1.00 | 26.91 | 1DIK2476 |
| ATOM | 2385 | ND2 | ASN | 316 | -0.690 | 4.936  | 26.081 | 1.00 | 24.90 | 1DIK2477 |
| ATOM | 2386 | N   | HIS | 317 | 4.439  | 4.930  | 26.918 | 1.00 | 19.55 | 1DIK2478 |
| ATOM | 2387 | CA  | HIS | 317 | 5.627  | 4.274  | 26.341 | 1.00 | 17.40 | 1DIK2479 |
| ATOM | 2388 | C   | HIS | 317 | 5.289  | 3.406  | 25.149 | 1.00 | 18.22 | 1DIK2480 |
| ATOM | 2389 | O   | HIS | 317 | 6.015  | 3.392  | 24.152 | 1.00 | 21.43 | 1DIK2481 |
| ATOM | 2390 | CB  | HIS | 317 | 6.341  | 3.401  | 27.380 | 1.00 | 19.52 | 1DIK2482 |
| ATOM | 2391 | CG  | HIS | 317 | 6.708  | 4.125  | 28.640 | 1.00 | 25.20 | 1DIK2483 |
| ATOM | 2392 | ND1 | HIS | 317 | 7.379  | 5.332  | 28.643 | 1.00 | 28.94 | 1DIK2484 |
| ATOM | 2393 | CD2 | HIS | 317 | 6.503  | 3.808  | 29.940 | 1.00 | 26.03 | 1DIK2485 |
| ATOM | 2394 | CE1 | HIS | 317 | 7.571  | 5.728  | 29.888 | 1.00 | 27.28 | 1DIK2486 |
| ATOM | 2395 | NE2 | HIS | 317 | 7.049  | 4.821  | 30.694 | 1.00 | 31.03 | 1DIK2487 |
| ATOM | 2396 | N   | THR | 318 | 4.187  | 2.670  | 25.255 | 1.00 | 18.44 | 1DIK2488 |
| ATOM | 2397 | CA  | THR | 318 | 3.740  | 1.800  | 24.180 | 1.00 | 18.99 | 1DIK2489 |
| ATOM | 2398 | C   | THR | 318 | 3.329  | 2.644  | 22.978 | 1.00 | 21.41 | 1DIK2490 |
| ATOM | 2399 | O   | THR | 318 | 3.764  | 2.399  | 21.851 | 1.00 | 20.04 | 1DIK2491 |
| ATOM | 2400 | CB  | THR | 318 | 2.544  | 0.955  | 24.632 | 1.00 | 18.88 | 1DIK2492 |
| ATOM | 2401 | OG1 | THR | 318 | 2.889  | 0.310  | 25.857 | 1.00 | 18.06 | 1DIK2493 |
| ATOM | 2402 | CG2 | THR | 318 | 2.188  | -0.116 | 23.594 | 1.00 | 14.25 | 1DIK2494 |
| ATOM | 2403 | N   | LEU | 319 | 2.500  | 3.650  | 23.221 | 1.00 | 20.99 | 1DIK2495 |
| ATOM | 2404 | CA  | LEU | 319 | 2.030  | 4.509  | 22.151 | 1.00 | 21.53 | 1DIK2496 |
| ATOM | 2405 | C   | LEU | 319 | 3.171  | 5.205  | 21.383 | 1.00 | 25.80 | 1DIK2497 |
| ATOM | 2406 | O   | LEU | 319 | 3.091  | 5.371  | 20.165 | 1.00 | 25.17 | 1DIK2498 |
| ATOM | 2407 | CB  | LEU | 319 | 1.085  | 5.541  | 22.733 | 1.00 | 20.62 | 1DIK2499 |
| ATOM | 2408 | CG  | LEU | 319 | 0.100  | 6.148  | 21.761 | 1.00 | 22.28 | 1DIK2500 |
| ATOM | 2409 | CD1 | LEU | 319 | -0.686 | 5.029  | 21.099 | 1.00 | 23.07 | 1DIK2501 |
| ATOM | 2410 | CD2 | LEU | 319 | -0.819 | 7.079  | 22.522 | 1.00 | 20.45 | 1DIK2502 |
| ATOM | 2411 | N   | ASP | 320 | 4.234  | 5.603  | 22.085 | 1.00 | 24.35 | 1DIK2503 |
| ATOM | 2412 | CA  | ASP | 320 | 5.360  | 6.297  | 21.445 | 1.00 | 22.47 | 1DIK2504 |
| ATOM | 2413 | C   | ASP | 320 | 6.493  | 5.459  | 20.884 | 1.00 | 21.00 | 1DIK2505 |
| ATOM | 2414 | O   | ASP | 320 | 7.437  | 6.005  | 20.317 | 1.00 | 17.90 | 1DIK2506 |
| ATOM | 2415 | CB  | ASP | 320 | 5.956  | 7.325  | 22.403 | 1.00 | 19.58 | 1DIK2507 |
| ATOM | 2416 | CG  | ASP | 320 | 5.061  | 8.531  | 22.582 | 1.00 | 22.62 | 1DIK2508 |
| ATOM | 2417 | OD1 | ASP | 320 | 3.909  | 8.509  | 22.092 | 1.00 | 22.05 | 1DIK2509 |
| ATOM | 2418 | OD2 | ASP | 320 | 5.509  | 9.505  | 23.214 | 1.00 | 18.12 | 1DIK2510 |
| ATOM | 2419 | N   | SER | 321 | 6.407  | 4.143  | 21.024 | 1.00 | 22.21 | 1DIK2511 |
| ATOM | 2420 | CA  | SER | 321 | 7.477  | 3.271  | 20.556 | 1.00 | 25.24 | 1DIK2512 |
| ATOM | 2421 | C   | SER | 321 | 7.416  | 2.869  | 19.082 | 1.00 | 25.75 | 1DIK2513 |
| ATOM | 2422 | O   | SER | 321 | 8.382  | 2.315  | 18.539 | 1.00 | 25.63 | 1DIK2514 |
| ATOM | 2423 | CB  | SER | 321 | 7.496  | 2.023  | 21.417 | 1.00 | 23.95 | 1DIK2515 |
| ATOM | 2424 | OG  | SER | 321 | 6.265  | 1.358  | 21.278 | 1.00 | 33.89 | 1DIK2516 |
| ATOM | 2425 | N   | SER | 322 | 6.288  | 3.155  | 18.441 | 1.00 | 27.36 | 1DIK2517 |
| ATOM | 2426 | CA  | SER | 322 | 6.084  | 2.776  | 17.053 | 1.00 | 27.84 | 1DIK2518 |
| ATOM | 2427 | C   | SER | 322 | 5.695  | 3.928  | 16.118 | 1.00 | 27.85 | 1DIK2519 |
| ATOM | 2428 | O   | SER | 322 | 4.948  | 4.838  | 16.502 | 1.00 | 26.35 | 1DIK2520 |
| ATOM | 2429 | CB  | SER | 322 | 5.016  | 1.677  | 17.007 | 1.00 | 27.18 | 1DIK2521 |
| ATOM | 2430 | OG  | SER | 322 | 4.568  | 1.439  | 15.688 | 1.00 | 34.11 | 1DIK2522 |

FIG. 8-38

In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2431 | N   | PRO | 323 | 6.206  | 3.895  | 14.872 | 1.00 | 27.40 | 1DIK2523 |
| ATOM | 2432 | CA  | PRO | 323 | 5.967  | 4.880  | 13.807 | 1.00 | 27.34 | 1DIK2524 |
| ATOM | 2433 | C   | PRO | 323 | 4.471  | 5.053  | 13.496 | 1.00 | 26.66 | 1DIK2525 |
| ATOM | 2434 | O   | PRO | 323 | 4.037  | 6.111  | 13.049 | 1.00 | 29.69 | 1DIK2526 |
| ATOM | 2435 | CB  | PRO | 323 | 6.713  | 4.276  | 12.611 | 1.00 | 27.47 | 1DIK2527 |
| ATOM | 2436 | CG  | PRO | 323 | 7.827  | 3.522  | 13.251 | 1.00 | 26.17 | 1DIK2528 |
| ATOM | 2437 | CD  | PRO | 323 | 7.121  | 2.840  | 14.398 | 1.00 | 25.07 | 1DIK2529 |
| ATOM | 2438 | N   | ALA | 324 | 3.685  | 4.014  | 13.732 | 1.00 | 23.94 | 1DIK2530 |
| ATOM | 2439 | CA  | ALA | 324 | 2.258  | 4.086  | 13.465 | 1.00 | 24.16 | 1DIK2531 |
| ATOM | 2440 | C   | ALA | 324 | 1.558  | 5.072  | 14.381 | 1.00 | 21.32 | 1DIK2532 |
| ATOM | 2441 | O   | ALA | 324 | 0.598  | 5.712  | 13.984 | 1.00 | 24.85 | 1DIK2533 |
| ATOM | 2442 | CB  | ALA | 324 | 1.615  | 2.709  | 13.615 | 1.00 | 23.92 | 1DIK2534 |
| ATOM | 2443 | N   | THR | 325 | 2.024  | 5.194  | 15.612 | 1.00 | 19.68 | 1DIK2535 |
| ATOM | 2444 | CA  | THR | 325 | 1.379  | 6.097  | 16.537 | 1.00 | 18.15 | 1DIK2536 |
| ATOM | 2445 | C   | THR | 325 | 2.260  | 7.256  | 16.940 | 1.00 | 20.32 | 1DIK2537 |
| ATOM | 2446 | O   | THR | 325 | 1.791  | 8.183  | 17.602 | 1.00 | 20.91 | 1DIK2538 |
| ATOM | 2447 | CB  | THR | 325 | 0.898  | 5.350  | 17.764 | 1.00 | 18.83 | 1DIK2539 |
| ATOM | 2448 | OG1 | THR | 325 | 1.907  | 4.428  | 18.161 | 1.00 | 23.06 | 1DIK2540 |
| ATOM | 2449 | CG2 | THR | 325 | -0.375 | 4.579  | 17.451 | 1.00 | 18.83 | 1DIK2541 |
| ATOM | 2450 | N   | PHE | 326 | 3.532  | 7.202  | 16.548 | 1.00 | 19.80 | 1DIK2542 |
| ATOM | 2451 | CA  | PHE | 326 | 4.467  | 8.282  | 16.824 | 1.00 | 18.01 | 1DIK2543 |
| ATOM | 2452 | C   | PHE | 326 | 5.605  | 8.328  | 15.787 | 1.00 | 18.87 | 1DIK2544 |
| ATOM | 2453 | O   | PHE | 326 | 6.725  | 7.875  | 16.046 | 1.00 | 20.23 | 1DIK2545 |
| ATOM | 2454 | CB  | PHE | 326 | 5.024  | 8.183  | 18.256 | 1.00 | 22.80 | 1DIK2546 |
| ATOM | 2455 | CG  | PHE | 326 | 5.620  | 9.478  | 18.761 | 1.00 | 20.42 | 1DIK2547 |
| ATOM | 2456 | CD1 | PHE | 326 | 4.810  | 10.445 | 19.362 | 1.00 | 19.30 | 1DIK2548 |
| ATOM | 2457 | CD2 | PHE | 326 | 6.979  | 9.755  | 18.595 | 1.00 | 15.81 | 1DIK2549 |
| ATOM | 2458 | CE1 | PHE | 326 | 5.340  | 11.680 | 19.790 | 1.00 | 12.22 | 1DIK2550 |
| ATOM | 2459 | CE2 | PHE | 326 | 7.515  | 10.984 | 19.018 | 1.00 | 18.58 | 1DIK2551 |
| ATOM | 2460 | CZ  | PHE | 326 | 6.686  | 11.948 | 19.617 | 1.00 | 14.93 | 1DIK2552 |
| ATOM | 2461 | N   | PRO | 327 | 5.323  | 8.876  | 14.588 | 1.00 | 18.42 | 1DIK2553 |
| ATOM | 2462 | CA  | PRO | 327 | 6.270  | 9.017  | 13.473 | 1.00 | 19.53 | 1DIK2554 |
| ATOM | 2463 | C   | PRO | 327 | 7.260  | 10.121 | 13.791 | 1.00 | 21.71 | 1DIK2555 |
| ATOM | 2464 | O   | PRO | 327 | 6.875  | 11.203 | 14.245 | 1.00 | 21.90 | 1DIK2556 |
| ATOM | 2465 | CB  | PRO | 327 | 5.388  | 9.449  | 12.300 | 1.00 | 16.34 | 1DIK2557 |
| ATOM | 2466 | CG  | PRO | 327 | 3.995  | 9.168  | 12.745 | 1.00 | 17.33 | 1DIK2558 |
| ATOM | 2467 | CD  | PRO | 327 | 4.013  | 9.422  | 14.211 | 1.00 | 16.80 | 1DIK2559 |
| ATOM | 2468 | N   | LEU | 328 | 8.532  | 9.855  | 13.539 | 1.00 | 24.26 | 1DIK2560 |
| ATOM | 2469 | CA  | LEU | 328 | 9.569  | 10.836 | 13.812 | 1.00 | 23.81 | 1DIK2561 |
| ATOM | 2470 | C   | LEU | 328 | 9.967  | 11.618 | 12.566 | 1.00 | 24.00 | 1DIK2562 |
| ATOM | 2471 | O   | LEU | 328 | 10.721 | 12.580 | 12.654 | 1.00 | 26.13 | 1DIK2563 |
| ATOM | 2472 | CB  | LEU | 328 | 10.801 | 10.135 | 14.384 | 1.00 | 22.63 | 1DIK2564 |
| ATOM | 2473 | CG  | LEU | 328 | 10.576 | 9.272  | 15.625 | 1.00 | 25.54 | 1DIK2565 |
| ATOM | 2474 | CD1 | LEU | 328 | 11.869 | 8.560  | 15.990 | 1.00 | 24.58 | 1DIK2566 |
| ATOM | 2475 | CD2 | LEU | 328 | 10.092 | 10.137 | 16.782 | 1.00 | 22.69 | 1DIK2567 |
| ATOM | 2476 | N   | ASN | 329 | 9.473  | 11.220 | 11.403 | 1.00 | 26.61 | 1DIK2568 |
| ATOM | 2477 | CA  | ASN | 329 | 9.865  | 11.919 | 10.198 | 1.00 | 29.63 | 1DIK2569 |
| ATOM | 2478 | C   | ASN | 329 | 8.759  | 12.578 | 9.413  | 1.00 | 27.72 | 1DIK2570 |
| ATOM | 2479 | O   | ASN | 329 | 8.941  | 12.876 | 8.243  | 1.00 | 32.13 | 1DIK2571 |
| ATOM | 2480 | CB  | ASN | 329 | 10.686 | 11.001 | 9.288  | 1.00 | 36.18 | 1DIK2572 |
| ATOM | 2481 | CG  | ASN | 329 | 12.075 | 10.733 | 9.843  | 1.00 | 48.05 | 1DIK2573 |
| ATOM | 2482 | OD1 | ASN | 329 | 12.927 | 11.632 | 9.873  | 1.00 | 52.99 | 1DIK2574 |
| ATOM | 2483 | ND2 | ASN | 329 | 12.315 | 9.494  | 10.290 | 1.00 | 53.32 | 1DIK2575 |
| ATOM | 2484 | N   | SER | 330 | 7.601  | 12.797 | 10.020 | 1.00 | 28.90 | 1DIK2576 |
| ATOM | 2485 | CA  | SER | 330 | 6.550  | 13.530 | 9.313  | 1.00 | 30.10 | 1DIK2577 |
| ATOM | 2486 | C   | SER | 330 | 7.141  | 14.938 | 9.429  | 1.00 | 33.67 | 1DIK2578 |
| ATOM | 2487 | O   | SER | 330 | 8.041  | 15.193 | 10.257 | 1.00 | 39.71 | 1DIK2579 |
| ATOM | 2488 | CB  | SER | 330 | 5.212  | 13.489 | 10.054 | 1.00 | 27.33 | 1DIK2580 |
| ATOM | 2489 | OG  | SER | 330 | 4.824  | 12.169 | 10.372 | 1.00 | 30.99 | 1DIK2581 |
| ATOM | 2490 | N   | THR | 331 | 6.670  | 15.869 | 8.633  | 1.00 | 29.23 | 1DIK2582 |
| ATOM | 2491 | CA  | THR | 331 | 7.260  | 17.198 | 8.729  | 1.00 | 29.49 | 1DIK2583 |
| ATOM | 2492 | C   | THR | 331 | 6.303  | 18.150 | 9.420  | 1.00 | 25.32 | 1DIK2584 |
| ATOM | 2493 | O   | THR | 331 | 6.714  | 19.147 | 10.005 | 1.00 | 22.51 | 1DIK2585 |
| ATOM | 2494 | CB  | THR | 331 | 7.590  | 17.690 | 7.321  | 1.00 | 31.50 | 1DIK2586 |
| ATOM | 2495 | OG1 | THR | 331 | 8.453  | 16.737 | 6.705  | 1.00 | 27.95 | 1DIK2587 |
| ATOM | 2496 | CG2 | THR | 331 | 8.242  | 19.035 | 7.343  | 1.00 | 36.14 | 1DIK2588 |

FIG. 8-39



|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 2497 | N   | LEU | 332 | 5.021   | 17.804 | 9.334  | 1.00 | 24.55 | 1DIK2589 |
| ATOM | 2498 | CA  | LEU | 332 | 3.930   | 18.578 | 9.885  | 1.00 | 23.43 | 1DIK2590 |
| ATOM | 2499 | C   | LEU | 332 | 3.168   | 17.760 | 10.916 | 1.00 | 21.17 | 1DIK2591 |
| ATOM | 2500 | O   | LEU | 332 | 2.814   | 16.606 | 10.655 | 1.00 | 20.55 | 1DIK2592 |
| ATOM | 2501 | CB  | LEU | 332 | 2.965   | 18.972 | 8.756  | 1.00 | 23.10 | 1DIK2593 |
| ATOM | 2502 | CG  | LEU | 332 | 3.542   | 19.823 | 7.625  | 1.00 | 25.75 | 1DIK2594 |
| ATOM | 2503 | CD1 | LEU | 332 | 2.598   | 19.836 | 6.431  | 1.00 | 21.25 | 1DIK2595 |
| ATOM | 2504 | CD2 | LEU | 332 | 3.802   | 21.223 | 8.145  | 1.00 | 19.61 | 1DIK2596 |
| ATOM | 2505 | N   | TYR | 333 | 2.916   | 18.361 | 12.076 | 1.00 | 19.69 | 1DIK2597 |
| ATOM | 2506 | CA  | TYR | 333 | 2.154   | 17.720 | 13.152 | 1.00 | 17.57 | 1DIK2598 |
| ATOM | 2507 | C   | TYR | 333 | 1.101   | 18.691 | 13.706 | 1.00 | 14.59 | 1DIK2599 |
| ATOM | 2508 | O   | TYR | 333 | 1.304   | 19.910 | 13.718 | 1.00 | 17.04 | 1DIK2600 |
| ATOM | 2509 | CB  | TYR | 333 | 3.076   | 17.317 | 14.301 | 1.00 | 16.40 | 1DIK2601 |
| ATOM | 2510 | CG  | TYR | 333 | 4.150   | 16.329 | 13.944 | 1.00 | 15.46 | 1DIK2602 |
| ATOM | 2511 | CD1 | TYR | 333 | 3.927   | 14.962 | 14.058 | 1.00 | 16.50 | 1DIK2603 |
| ATOM | 2512 | CD2 | TYR | 333 | 5.399   | 16.758 | 13.519 | 1.00 | 15.19 | 1DIK2604 |
| ATOM | 2513 | CE1 | TYR | 333 | 4.929   | 14.039 | 13.758 | 1.00 | 19.21 | 1DIK2605 |
| ATOM | 2514 | CE2 | TYR | 333 | 6.412   | 15.845 | 13.214 | 1.00 | 19.07 | 1DIK2606 |
| ATOM | 2515 | CZ  | TYR | 333 | 6.170   | 14.487 | 13.338 | 1.00 | 20.05 | 1DIK2607 |
| ATOM | 2516 | OH  | TYR | 333 | 7.165   | 13.580 | 13.056 | 1.00 | 20.29 | 1DIK2608 |
| ATOM | 2517 | N   | ALA | 334 | -0.022  | 18.154 | 14.161 | 1.00 | 11.62 | 1DIK2609 |
| ATOM | 2518 | CA  | ALA | 334 | -1.072  | 18.971 | 14.764 | 1.00 | 14.11 | 1DIK2610 |
| ATOM | 2519 | C   | ALA | 334 | -1.642  | 18.190 | 15.952 | 1.00 | 17.81 | 1DIK2611 |
| ATOM | 2520 | O   | ALA | 334 | -2.001  | 17.014 | 15.808 | 1.00 | 20.52 | 1DIK2612 |
| ATOM | 2521 | CB  | ALA | 334 | -2.169  | 19.291 | 13.763 | 1.00 | 6.64  | 1DIK2613 |
| ATOM | 2522 | N   | ASP | 335 | -1.706  | 18.842 | 17.117 | 1.00 | 15.89 | 1DIK2614 |
| ATOM | 2523 | CA  | ASP | 335 | -2.234  | 18.234 | 18.334 | 1.00 | 15.85 | 1DIK2615 |
| ATOM | 2524 | C   | ASP | 335 | -3.350  | 19.116 | 18.877 | 1.00 | 19.02 | 1DIK2616 |
| ATOM | 2525 | O   | ASP | 335 | -3.261  | 20.350 | 18.823 | 1.00 | 17.86 | 1DIK2617 |
| ATOM | 2526 | CB  | ASP | 335 | -1.126  | 18.059 | 19.392 | 1.00 | 16.00 | 1DIK2618 |
| ATOM | 2527 | CG  | ASP | 335 | -0.099  | 16.997 | 19.001 | 1.00 | 20.47 | 1DIK2619 |
| ATOM | 2528 | OD1 | ASP | 335 | -0.502  | 15.948 | 18.466 | 1.00 | 22.42 | 1DIK2620 |
| ATOM | 2529 | OD2 | ASP | 335 | 1.112   | 17.201 | 19.224 | 1.00 | 20.56 | 1DIK2621 |
| ATOM | 2530 | N   | PHE | 336 | -4.402  | 18.481 | 19.395 | 1.00 | 18.17 | 1DIK2622 |
| ATOM | 2531 | CA  | PHE | 336 | -5.543  | 19.200 | 19.937 | 1.00 | 17.35 | 1DIK2623 |
| ATOM | 2532 | C   | PHE | 336 | -5.774  | 18.839 | 21.402 | 1.00 | 19.88 | 1DIK2624 |
| ATOM | 2533 | O   | PHE | 336 | -5.815  | 17.655 | 21.776 | 1.00 | 19.43 | 1DIK2625 |
| ATOM | 2534 | CB  | PHE | 336 | -6.778  | 18.940 | 19.066 | 1.00 | 17.54 | 1DIK2626 |
| ATOM | 2535 | CG  | PHE | 336 | -6.594  | 19.394 | 17.655 | 1.00 | 14.71 | 1DIK2627 |
| ATOM | 2536 | CD1 | PHE | 336 | -5.954  | 18.577 | 16.728 | 1.00 | 14.86 | 1DIK2628 |
| ATOM | 2537 | CD2 | PHE | 336 | -6.978  | 20.676 | 17.271 | 1.00 | 14.13 | 1DIK2629 |
| ATOM | 2538 | CE1 | PHE | 336 | -5.688  | 19.036 | 15.434 | 1.00 | 19.47 | 1DIK2630 |
| ATOM | 2539 | CE2 | PHE | 336 | -6.721  | 21.148 | 15.987 | 1.00 | 13.80 | 1DIK2631 |
| ATOM | 2540 | CZ  | PHE | 336 | -6.072  | 20.328 | 15.065 | 1.00 | 15.97 | 1DIK2632 |
| ATOM | 2541 | N   | SER | 337 | -5.933  | 19.881 | 22.219 | 1.00 | 16.75 | 1DIK2633 |
| ATOM | 2542 | CA  | SER | 337 | -6.096  | 19.713 | 23.642 | 1.00 | 15.92 | 1DIK2634 |
| ATOM | 2543 | C   | SER | 337 | -6.962  | 20.793 | 24.331 | 1.00 | 17.12 | 1DIK2635 |
| ATOM | 2544 | O   | SER | 337 | -7.708  | 21.549 | 23.684 | 1.00 | 15.10 | 1DIK2636 |
| ATOM | 2545 | CB  | SER | 337 | -4.696  | 19.692 | 24.251 | 1.00 | 13.71 | 1DIK2637 |
| ATOM | 2546 | OG  | SER | 337 | -4.698  | 18.968 | 25.455 | 1.00 | 18.65 | 1DIK2638 |
| ATOM | 2547 | N   | HIS | 338 | -6.843  | 20.836 | 25.658 | 1.00 | 16.73 | 1DIK2639 |
| ATOM | 2548 | CA  | HIS | 338 | -7.546  | 21.772 | 26.536 | 1.00 | 18.64 | 1DIK2640 |
| ATOM | 2549 | C   | HIS | 338 | -6.616  | 22.900 | 26.998 | 1.00 | 20.65 | 1DIK2641 |
| ATOM | 2550 | O   | HIS | 338 | -5.392  | 22.785 | 26.917 | 1.00 | 23.22 | 1DIK2642 |
| ATOM | 2551 | CB  | HIS | 338 | -8.055  | 21.039 | 27.785 | 1.00 | 17.35 | 1DIK2643 |
| ATOM | 2552 | CG  | HIS | 338 | -8.942  | 19.871 | 27.483 | 1.00 | 21.37 | 1DIK2644 |
| ATOM | 2553 | ND1 | HIS | 338 | -10.309 | 19.990 | 27.345 | 1.00 | 21.44 | 1DIK2645 |
| ATOM | 2554 | CD2 | HIS | 338 | -8.654  | 18.566 | 27.265 | 1.00 | 16.55 | 1DIK2646 |
| ATOM | 2555 | CE1 | HIS | 338 | -10.824 | 18.809 | 27.053 | 1.00 | 21.79 | 1DIK2647 |
| ATOM | 2556 | NE2 | HIS | 338 | -9.841  | 17.931 | 26.998 | 1.00 | 19.02 | 1DIK2648 |
| ATOM | 2557 | N   | ASP | 339 | -7.204  | 23.981 | 27.504 | 1.00 | 21.52 | 1DIK2649 |
| ATOM | 2558 | CA  | ASP | 339 | -6.436  | 25.120 | 27.983 | 1.00 | 19.43 | 1DIK2650 |
| ATOM | 2559 | C   | ASP | 339 | -5.452  | 24.739 | 29.079 | 1.00 | 18.53 | 1DIK2651 |
| ATOM | 2560 | O   | ASP | 339 | -4.301  | 25.170 | 29.052 | 1.00 | 22.28 | 1DIK2652 |
| ATOM | 2561 | CB  | ASP | 339 | -7.364  | 26.275 | 28.452 | 1.00 | 23.01 | 1DIK2653 |
| ATOM | 2562 | CG  | ASP | 339 | -8.397  | 25.856 | 29.528 | 1.00 | 25.24 | 1DIK2654 |

FIG. 8-40

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2563 | OD1 | ASP | 339 | -8.560 | 24.654 | 29.838 | 1.00 | 27.53 | 1DIK2655 |
| ATOM | 2564 | OD2 | ASP | 339 | -9.066 | 26.759 | 30.075 | 1.00 | 27.85 | 1DIK2656 |
| ATOM | 2565 | N   | ASN | 340 | -5.892 | 23.922 | 30.032 | 1.00 | 16.85 | 1DIK2657 |
| ATOM | 2566 | CA  | ASN | 340 | -5.035 | 23.514 | 31.141 | 1.00 | 17.73 | 1DIK2658 |
| ATOM | 2567 | C   | ASN | 340 | -3.750 | 22.830 | 30.712 | 1.00 | 19.02 | 1DIK2659 |
| ATOM | 2568 | O   | ASN | 340 | -2.666 | 23.210 | 31.161 | 1.00 | 21.77 | 1DIK2660 |
| ATOM | 2569 | CB  | ASN | 340 | -5.810 | 22.643 | 32.111 | 1.00 | 19.49 | 1DIK2661 |
| ATOM | 2570 | CG  | ASN | 340 | -6.815 | 23.443 | 32.908 | 1.00 | 22.56 | 1DIK2662 |
| ATOM | 2571 | OD1 | ASN | 340 | -6.752 | 24.662 | 32.945 | 1.00 | 25.89 | 1DIK2663 |
| ATOM | 2572 | ND2 | ASN | 340 | -7.743 | 22.762 | 33.552 | 1.00 | 28.53 | 1DIK2664 |
| ATOM | 2573 | N   | GLY | 341 | -3.858 | 21.831 | 29.845 | 1.00 | 17.89 | 1DIK2665 |
| ATOM | 2574 | CA  | GLY | 341 | -2.665 | 21.160 | 29.364 | 1.00 | 15.63 | 1DIK2666 |
| ATOM | 2575 | C   | GLY | 341 | -1.764 | 22.118 | 28.600 | 1.00 | 11.99 | 1DIK2667 |
| ATOM | 2576 | O   | GLY | 341 | -0.549 | 22.077 | 28.735 | 1.00 | 16.11 | 1DIK2668 |
| ATOM | 2577 | N   | ILE | 342 | -2.344 | 22.996 | 27.797 | 1.00 | 13.11 | 1DIK2669 |
| ATOM | 2578 | CA  | ILE | 342 | -1.525 | 23.941 | 27.036 | 1.00 | 17.14 | 1DIK2670 |
| ATOM | 2579 | C   | ILE | 342 | -0.755 | 24.910 | 27.946 | 1.00 | 17.23 | 1DIK2671 |
| ATOM | 2580 | O   | ILE | 342 | 0.410  | 25.214 | 27.694 | 1.00 | 17.60 | 1DIK2672 |
| ATOM | 2581 | CB  | ILE | 342 | -2.399 | 24.690 | 25.990 | 1.00 | 16.48 | 1DIK2673 |
| ATOM | 2582 | CG1 | ILE | 342 | -2.982 | 23.663 | 25.015 | 1.00 | 11.17 | 1DIK2674 |
| ATOM | 2583 | CG2 | ILE | 342 | -1.574 | 25.710 | 25.221 | 1.00 | 12.60 | 1DIK2675 |
| ATOM | 2584 | CD1 | ILE | 342 | -4.052 | 24.199 | 24.138 | 1.00 | 14.25 | 1DIK2676 |
| ATOM | 2585 | N   | ILE | 343 | -1.397 | 25.384 | 29.010 | 1.00 | 20.72 | 1DIK2677 |
| ATOM | 2586 | CA  | ILE | 343 | -0.747 | 26.296 | 29.948 | 1.00 | 20.28 | 1DIK2678 |
| ATOM | 2587 | C   | ILE | 343 | 0.531  | 25.647 | 30.503 | 1.00 | 21.94 | 1DIK2679 |
| ATOM | 2588 | O   | ILE | 343 | 1.617  | 26.243 | 30.467 | 1.00 | 23.12 | 1DIK2680 |
| ATOM | 2589 | CB  | ILE | 343 | -1.703 | 26.677 | 31.124 | 1.00 | 17.08 | 1DIK2681 |
| ATOM | 2590 | CG1 | ILE | 343 | -2.757 | 27.671 | 30.638 | 1.00 | 12.06 | 1DIK2682 |
| ATOM | 2591 | CG2 | ILE | 343 | -0.911 | 27.321 | 32.277 | 1.00 | 12.92 | 1DIK2683 |
| ATOM | 2592 | CD1 | ILE | 343 | -2.152 | 29.042 | 30.271 | 1.00 | 11.66 | 1DIK2684 |
| ATOM | 2593 | N   | SER | 344 | 0.394  | 24.424 | 31.006 | 1.00 | 20.30 | 1DIK2685 |
| ATOM | 2594 | CA  | SER | 344 | 1.519  | 23.690 | 31.564 | 1.00 | 17.86 | 1DIK2686 |
| ATOM | 2595 | C   | SER | 344 | 2.636  | 23.482 | 30.544 | 1.00 | 20.31 | 1DIK2687 |
| ATOM | 2596 | O   | SER | 344 | 3.825  | 23.604 | 30.881 | 1.00 | 19.02 | 1DIK2688 |
| ATOM | 2597 | CB  | SER | 344 | 1.036  | 22.344 | 32.081 | 1.00 | 18.82 | 1DIK2689 |
| ATOM | 2598 | OG  | SER | 344 | 0.137  | 22.512 | 33.164 | 1.00 | 19.78 | 1DIK2690 |
| ATOM | 2599 | N   | ILE | 345 | 2.248  | 23.170 | 29.302 | 1.00 | 19.86 | 1DIK2691 |
| ATOM | 2600 | CA  | ILE | 345 | 3.194  | 22.940 | 28.205 | 1.00 | 19.61 | 1DIK2692 |
| ATOM | 2601 | C   | ILE | 345 | 3.990  | 24.211 | 27.877 | 1.00 | 22.16 | 1DIK2693 |
| ATOM | 2602 | O   | ILE | 345 | 5.211  | 24.156 | 27.678 | 1.00 | 21.36 | 1DIK2694 |
| ATOM | 2603 | CB  | ILE | 345 | 2.460  | 22.420 | 26.936 | 1.00 | 17.67 | 1DIK2695 |
| ATOM | 2604 | CG1 | ILE | 345 | 1.926  | 21.009 | 27.194 | 1.00 | 17.47 | 1DIK2696 |
| ATOM | 2605 | CG2 | ILE | 345 | 3.389  | 22.402 | 25.738 | 1.00 | 10.81 | 1DIK2697 |
| ATOM | 2606 | CD1 | ILE | 345 | 1.129  | 20.443 | 26.052 | 1.00 | 20.20 | 1DIK2698 |
| ATOM | 2607 | N   | LEU | 346 | 3.290  | 25.347 | 27.828 | 1.00 | 21.51 | 1DIK2699 |
| ATOM | 2608 | CA  | LEU | 346 | 3.906  | 26.645 | 27.558 | 1.00 | 21.18 | 1DIK2700 |
| ATOM | 2609 | C   | LEU | 346 | 4.987  | 26.936 | 28.610 | 1.00 | 19.82 | 1DIK2701 |
| ATOM | 2610 | O   | LEU | 346 | 6.078  | 27.401 | 28.281 | 1.00 | 22.60 | 1DIK2702 |
| ATOM | 2611 | CB  | LEU | 346 | 2.838  | 27.754 | 27.559 | 1.00 | 21.21 | 1DIK2703 |
| ATOM | 2612 | CG  | LEU | 346 | 1.787  | 27.761 | 26.430 | 1.00 | 25.27 | 1DIK2704 |
| ATOM | 2613 | CD1 | LEU | 346 | 0.797  | 28.905 | 26.655 | 1.00 | 22.27 | 1DIK2705 |
| ATOM | 2614 | CD2 | LEU | 346 | 2.457  | 27.910 | 25.067 | 1.00 | 19.78 | 1DIK2706 |
| ATOM | 2615 | N   | PHE | 347 | 4.694  | 26.658 | 29.875 | 1.00 | 21.86 | 1DIK2707 |
| ATOM | 2616 | CA  | PHE | 347 | 5.679  | 26.878 | 30.929 | 1.00 | 21.46 | 1DIK2708 |
| ATOM | 2617 | C   | PHE | 347 | 6.825  | 25.881 | 30.884 | 1.00 | 24.47 | 1DIK2709 |
| ATOM | 2618 | O   | PHE | 347 | 7.981  | 26.282 | 31.064 | 1.00 | 23.78 | 1DIK2710 |
| ATOM | 2619 | CB  | PHE | 347 | 5.006  | 26.903 | 32.300 | 1.00 | 22.55 | 1DIK2711 |
| ATOM | 2620 | CG  | PHE | 347 | 4.289  | 28.189 | 32.566 | 1.00 | 19.15 | 1DIK2712 |
| ATOM | 2621 | CD1 | PHE | 347 | 4.977  | 29.283 | 33.088 | 1.00 | 19.76 | 1DIK2713 |
| ATOM | 2622 | CD2 | PHE | 347 | 2.953  | 28.332 | 32.233 | 1.00 | 17.59 | 1DIK2714 |
| ATOM | 2623 | CE1 | PHE | 347 | 4.341  | 30.508 | 33.268 | 1.00 | 18.90 | 1DIK2715 |
| ATOM | 2624 | CE2 | PHE | 347 | 2.311  | 29.542 | 32.407 | 1.00 | 21.97 | 1DIK2716 |
| ATOM | 2625 | CZ  | PHE | 347 | 3.007  | 30.638 | 32.926 | 1.00 | 20.72 | 1DIK2717 |
| ATOM | 2626 | N   | ALA | 348 | 6.517  | 24.599 | 30.634 | 1.00 | 25.00 | 1DIK2718 |
| ATOM | 2627 | CA  | ALA | 348 | 7.547  | 23.551 | 30.533 | 1.00 | 23.63 | 1DIK2719 |
| ATOM | 2628 | C   | ALA | 348 | 8.523  | 23.830 | 29.374 | 1.00 | 23.94 | 1DIK2720 |



|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2629 | O   | ALA | 348 | 9.647  | 23.327 | 29.368 | 1.00 | 22.81 | 1DIK2721 |
| ATOM | 2630 | CB  | ALA | 348 | 6.909  | 22.175 | 30.360 | 1.00 | 18.75 | 1DIK2722 |
| ATOM | 2631 | N   | LEU | 349 | 8.096  | 24.624 | 28.394 | 1.00 | 23.18 | 1DIK2723 |
| ATOM | 2632 | CA  | LEU | 349 | 8.969  | 24.977 | 27.279 | 1.00 | 24.76 | 1DIK2724 |
| ATOM | 2633 | C   | LEU | 349 | 9.725  | 26.227 | 27.606 | 1.00 | 25.45 | 1DIK2725 |
| ATOM | 2634 | O   | LEU | 349 | 10.538 | 26.708 | 26.760 | 1.00 | 26.63 | 1DIK2726 |
| ATOM | 2635 | CB  | LEU | 349 | 8.11   | 25.197 | 25.990 | 1.00 | 24.37 | 1DIK2727 |
| ATOM | 2636 | CG  | LEU | 349 | 7.530  | 23.958 | 25.332 | 1.00 | 27.98 | 1DIK2728 |
| ATOM | 2637 | CD1 | LEU | 349 | 6.813  | 24.399 | 24.054 | 1.00 | 24.59 | 1DIK2729 |
| ATOM | 2638 | CD2 | LEU | 349 | 8.578  | 22.871 | 25.023 | 1.00 | 19.81 | 1DIK2730 |
| ATOM | 2639 | N   | GLY | 350 | 9.625  | 26.745 | 28.827 | 1.00 | 25.68 | 1DIK2731 |
| ATOM | 2640 | CA  | GLY | 350 | 10.370 | 27.916 | 29.269 | 1.00 | 27.97 | 1DIK2732 |
| ATOM | 2641 | C   | GLY | 350 | 10.009 | 29.236 | 28.611 | 1.00 | 30.96 | 1DIK2733 |
| ATOM | 2642 | O   | GLY | 350 | 10.781 | 30.197 | 28.671 | 1.00 | 31.89 | 1DIK2734 |
| ATOM | 2643 | N   | LEU | 351 | 8.830  | 29.292 | 27.997 | 1.00 | 31.09 | 1DIK2735 |
| ATOM | 2644 | CA  | LEU | 351 | 8.367  | 30.486 | 27.301 | 1.00 | 29.39 | 1DIK2736 |
| ATOM | 2645 | C   | LEU | 351 | 8.048  | 31.700 | 28.184 | 1.00 | 30.29 | 1DIK2737 |
| ATOM | 2646 | O   | LEU | 351 | 8.092  | 32.841 | 27.722 | 1.00 | 28.55 | 1DIK2738 |
| ATOM | 2647 | CB  | LEU | 351 | 7.147  | 30.132 | 26.456 | 1.00 | 31.14 | 1DIK2739 |
| ATOM | 2648 | CG  | LEU | 351 | 7.359  | 28.989 | 25.467 | 1.00 | 29.30 | 1DIK2740 |
| ATOM | 2649 | CD1 | LEU | 351 | 6.063  | 28.718 | 24.722 | 1.00 | 28.64 | 1DIK2741 |
| ATOM | 2650 | CD2 | LEU | 351 | 8.483  | 29.347 | 24.501 | 1.00 | 25.72 | 1DIK2742 |
| ATOM | 2651 | N   | TYR | 352 | 7.731  | 31.474 | 29.453 | 1.00 | 31.04 | 1DIK2743 |
| ATOM | 2652 | CA  | TYR | 352 | 7.410  | 32.594 | 30.325 | 1.00 | 31.74 | 1DIK2744 |
| ATOM | 2653 | C   | TYR | 352 | 8.350  | 32.747 | 31.502 | 1.00 | 34.72 | 1DIK2745 |
| ATOM | 2654 | O   | TYR | 352 | 7.942  | 33.102 | 32.613 | 1.00 | 33.44 | 1DIK2746 |
| ATOM | 2655 | CB  | TYR | 352 | 5.953  | 32.484 | 30.752 | 1.00 | 26.97 | 1DIK2747 |
| ATOM | 2656 | CG  | TYR | 352 | 5.090  | 32.667 | 29.552 | 1.00 | 28.46 | 1DIK2748 |
| ATOM | 2657 | CD1 | TYR | 352 | 4.916  | 33.932 | 29.003 | 1.00 | 27.92 | 1DIK2749 |
| ATOM | 2658 | CD2 | TYR | 352 | 4.506  | 31.574 | 28.910 | 1.00 | 29.60 | 1DIK2750 |
| ATOM | 2659 | CE1 | TYR | 352 | 4.190  | 34.118 | 27.846 | 1.00 | 30.02 | 1DIK2751 |
| ATOM | 2660 | CE2 | TYR | 352 | 3.773  | 31.745 | 27.745 | 1.00 | 30.26 | 1DIK2752 |
| ATOM | 2661 | CZ  | TYR | 352 | 3.622  | 33.029 | 27.220 | 1.00 | 32.93 | 1DIK2753 |
| ATOM | 2662 | OH  | TYR | 352 | 2.903  | 33.228 | 26.067 | 1.00 | 33.54 | 1DIK2754 |
| ATOM | 2663 | N   | ASN | 353 | 9.626  | 32.484 | 31.236 | 1.00 | 40.74 | 1DIK2755 |
| ATOM | 2664 | CA  | ASN | 353 | 10.669 | 32.582 | 32.251 | 1.00 | 47.39 | 1DIK2756 |
| ATOM | 2665 | C   | ASN | 353 | 10.941 | 34.011 | 32.729 | 1.00 | 47.72 | 1DIK2757 |
| ATOM | 2666 | O   | ASN | 353 | 11.505 | 34.206 | 33.802 | 1.00 | 46.72 | 1DIK2758 |
| ATOM | 2667 | CB  | ASN | 353 | 11.966 | 31.932 | 31.749 | 1.00 | 49.39 | 1DIK2759 |
| ATOM | 2668 | CG  | ASN | 353 | 11.931 | 30.406 | 31.832 | 1.00 | 53.90 | 1DIK2760 |
| ATOM | 2669 | OD1 | ASN | 353 | 10.895 | 29.801 | 32.155 | 1.00 | 51.32 | 1DIK2761 |
| ATOM | 2670 | ND2 | ASN | 353 | 13.071 | 29.774 | 31.537 | 1.00 | 57.79 | 1DIK2762 |
| ATOM | 2671 | N   | GLY | 354 | 10.535 | 35.002 | 31.937 | 1.00 | 48.40 | 1DIK2763 |
| ATOM | 2672 | CA  | GLY | 354 | 10.741 | 36.390 | 32.319 | 1.00 | 49.75 | 1DIK2764 |
| ATOM | 2673 | C   | GLY | 354 | 9.531  | 36.974 | 33.032 | 1.00 | 49.81 | 1DIK2765 |
| ATOM | 2674 | O   | GLY | 354 | 9.424  | 38.193 | 33.203 | 1.00 | 55.38 | 1DIK2766 |
| ATOM | 2675 | N   | THR | 355 | 8.622  | 36.101 | 33.449 | 1.00 | 46.75 | 1DIK2767 |
| ATOM | 2676 | CA  | THR | 355 | 7.396  | 36.496 | 34.135 | 1.00 | 46.22 | 1DIK2768 |
| ATOM | 2677 | C   | THR | 355 | 7.536  | 36.191 | 35.631 | 1.00 | 47.74 | 1DIK2769 |
| ATOM | 2678 | O   | THR | 355 | 7.789  | 35.042 | 36.007 | 1.00 | 47.46 | 1DIK2770 |
| ATOM | 2679 | CB  | THR | 355 | 6.180  | 35.691 | 33.556 | 1.00 | 42.82 | 1DIK2771 |
| ATOM | 2680 | OG1 | THR | 355 | 6.147  | 35.847 | 32.131 | 1.00 | 43.08 | 1DIK2772 |
| ATOM | 2681 | CG2 | THR | 355 | 4.853  | 36.160 | 34.154 | 1.00 | 35.74 | 1DIK2773 |
| ATOM | 2682 | N   | LYS | 356 | 7.388  | 37.202 | 36.486 | 1.00 | 44.73 | 1DIK2774 |
| ATOM | 2683 | CA  | LYS | 356 | 7.478  | 36.960 | 37.926 | 1.00 | 42.43 | 1DIK2775 |
| ATOM | 2684 | C   | LYS | 356 | 6.116  | 36.530 | 38.437 | 1.00 | 40.86 | 1DIK2776 |
| ATOM | 2685 | O   | LYS | 356 | 5.103  | 36.849 | 37.813 | 1.00 | 42.40 | 1DIK2777 |
| ATOM | 2686 | CB  | LYS | 356 | 7.942  | 38.210 | 38.664 | 1.00 | 41.47 | 1DIK2778 |
| ATOM | 2687 | CG  | LYS | 356 | 9.438  | 38.349 | 38.668 | 1.00 | 42.08 | 1DIK2779 |
| ATOM | 2688 | CD  | LYS | 356 | 9.866  | 39.579 | 39.406 | 1.00 | 42.64 | 1DIK2780 |
| ATOM | 2689 | CE  | LYS | 356 | 11.351 | 39.719 | 39.346 | 1.00 | 42.34 | 1DIK2781 |
| ATOM | 2690 | NZ  | LYS | 356 | 11.693 | 41.124 | 39.631 | 1.00 | 48.71 | 1DIK2782 |
| ATOM | 2691 | N   | PRO | 357 | 6.069  | 35.806 | 39.577 | 1.00 | 38.87 | 1DIK2783 |
| ATOM | 2692 | CA  | PRO | 357 | 4.777  | 35.358 | 40.120 | 1.00 | 39.88 | 1DIK2784 |
| ATOM | 2693 | C   | PRO | 357 | 3.771  | 36.512 | 40.134 | 1.00 | 42.03 | 1DIK2785 |
| ATOM | 2694 | O   | PRO | 357 | 4.092  | 37.629 | 40.564 | 1.00 | 44.16 | 1DIK2786 |

FIG. 8-42

In re Application of: Dirk KOSTREWA, et al.  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2695 | CB  | PRO | 357 | 5.149  | 34.869 | 41.517 | 1.00 | 38.17 | 1DIK2787 |
| ATOM | 2696 | CG  | PRO | 357 | 6.526  | 34.306 | 41.295 | 1.00 | 34.95 | 1DIK2788 |
| ATOM | 2697 | CD  | PRO | 357 | 7.183  | 35.366 | 40.438 | 1.00 | 33.26 | 1DIK2789 |
| ATOM | 2698 | N   | LEU | 358 | 2.562  | 36.252 | 39.649 | 1.00 | 40.53 | 1DIK2790 |
| ATOM | 2699 | CA  | LEU | 358 | 1.555  | 37.298 | 39.584 | 1.00 | 39.23 | 1DIK2791 |
| ATOM | 2700 | C   | LEU | 358 | 1.075  | 37.682 | 40.975 | 1.00 | 40.76 | 1DIK2792 |
| ATOM | 2701 | O   | LEU | 358 | 0.861  | 36.815 | 41.821 | 1.00 | 40.81 | 1DIK2793 |
| ATOM | 2702 | CB  | LEU | 358 | 0.355  | 36.864 | 38.732 | 1.00 | 37.58 | 1DIK2794 |
| ATOM | 2703 | CG  | LEU | 358 | 0.499  | 36.397 | 37.283 | 1.00 | 34.63 | 1DIK2795 |
| ATOM | 2704 | CD1 | LEU | 358 | -0.862 | 36.528 | 36.631 | 1.00 | 32.21 | 1DIK2796 |
| ATOM | 2705 | CD2 | LEU | 358 | 1.512  | 37.210 | 36.528 | 1.00 | 33.59 | 1DIK2797 |
| ATOM | 2706 | N   | SER | 359 | 0.900  | 38.979 | 41.205 | 1.00 | 39.69 | 1DIK2798 |
| ATOM | 2707 | CA  | SER | 359 | 0.432  | 39.461 | 42.494 | 1.00 | 40.29 | 1DIK2799 |
| ATOM | 2708 | C   | SER | 359 | -0.963 | 38.910 | 42.687 | 1.00 | 38.32 | 1DIK2800 |
| ATOM | 2709 | O   | SER | 359 | -1.763 | 38.923 | 41.758 | 1.00 | 38.66 | 1DIK2801 |
| ATOM | 2710 | CB  | SER | 359 | 0.376  | 40.989 | 42.515 | 1.00 | 43.59 | 1DIK2802 |
| ATOM | 2711 | OG  | SER | 359 | -0.234 | 41.445 | 43.720 | 1.00 | 51.02 | 1DIK2803 |
| ATOM | 2712 | N   | THR | 360 | -1.254 | 38.432 | 43.889 | 1.00 | 37.92 | 1DIK2804 |
| ATOM | 2713 | CA  | THR | 360 | -2.564 | 37.870 | 44.189 | 1.00 | 40.16 | 1DIK2805 |
| ATOM | 2714 | C   | THR | 360 | -3.564 | 38.907 | 44.709 | 1.00 | 39.58 | 1DIK2806 |
| ATOM | 2715 | O   | THR | 360 | -4.736 | 38.589 | 44.952 | 1.00 | 38.55 | 1DIK2807 |
| ATOM | 2716 | CB  | THR | 360 | -2.425 | 36.709 | 45.206 | 1.00 | 42.37 | 1DIK2808 |
| ATOM | 2717 | OG1 | THR | 360 | -1.519 | 37.095 | 46.255 | 1.00 | 47.97 | 1DIK2809 |
| ATOM | 2718 | CG2 | THR | 360 | -1.877 | 35.462 | 44.515 | 1.00 | 40.43 | 1DIK2810 |
| ATOM | 2719 | N   | THR | 361 | -3.104 | 40.144 | 44.875 | 1.00 | 40.07 | 1DIK2811 |
| ATOM | 2720 | CA  | THR | 361 | -3.964 | 41.214 | 45.381 | 1.00 | 42.85 | 1DIK2812 |
| ATOM | 2721 | C   | THR | 361 | -4.164 | 42.376 | 44.414 | 1.00 | 44.11 | 1DIK2813 |
| ATOM | 2722 | O   | THR | 361 | -5.183 | 43.053 | 44.469 | 1.00 | 44.52 | 1DIK2814 |
| ATOM | 2723 | CB  | THR | 361 | -3.432 | 41.787 | 46.728 | 1.00 | 42.66 | 1DIK2815 |
| ATOM | 2724 | OG1 | THR | 361 | -1.993 | 41.834 | 46.720 | 1.00 | 42.42 | 1DIK2816 |
| ATOM | 2725 | CG2 | THR | 361 | -3.909 | 40.934 | 47.877 | 1.00 | 45.08 | 1DIK2817 |
| ATOM | 2726 | N   | THR | 362 | -3.201 | 42.595 | 43.524 | 1.00 | 45.47 | 1DIK2818 |
| ATOM | 2727 | CA  | THR | 362 | -3.272 | 43.703 | 42.582 | 1.00 | 45.00 | 1DIK2819 |
| ATOM | 2728 | C   | THR | 362 | -3.134 | 43.247 | 41.138 | 1.00 | 42.73 | 1DIK2820 |
| ATOM | 2729 | O   | THR | 362 | -2.368 | 42.332 | 40.846 | 1.00 | 43.39 | 1DIK2821 |
| ATOM | 2730 | CB  | THR | 362 | -2.142 | 44.689 | 42.867 | 1.00 | 49.03 | 1DIK2822 |
| ATOM | 2731 | OG1 | THR | 362 | -2.006 | 44.846 | 44.287 | 1.00 | 56.76 | 1DIK2823 |
| ATOM | 2732 | CG2 | THR | 362 | -2.434 | 46.036 | 42.227 | 1.00 | 50.37 | 1DIK2824 |
| ATOM | 2733 | N   | VAL | 363 | -3.879 | 43.901 | 40.249 | 1.00 | 40.72 | 1DIK2825 |
| ATOM | 2734 | CA  | VAL | 363 | -3.860 | 43.616 | 38.815 | 1.00 | 37.30 | 1DIK2826 |
| ATOM | 2735 | C   | VAL | 363 | -2.524 | 44.081 | 38.243 | 1.00 | 39.07 | 1DIK2827 |
| ATOM | 2736 | O   | VAL | 363 | -2.045 | 45.160 | 38.603 | 1.00 | 40.33 | 1DIK2828 |
| ATOM | 2737 | CB  | VAL | 363 | -4.982 | 44.402 | 38.070 | 1.00 | 34.35 | 1DIK2829 |
| ATOM | 2738 | CG1 | VAL | 363 | -4.928 | 44.143 | 36.562 | 1.00 | 33.50 | 1DIK2830 |
| ATOM | 2739 | CG2 | VAL | 363 | -6.332 | 44.034 | 38.625 | 1.00 | 32.51 | 1DIK2831 |
| ATOM | 2740 | N   | GLU | 364 | -1.934 | 43.269 | 37.366 | 1.00 | 38.65 | 1DIK2832 |
| ATOM | 2741 | CA  | GLU | 364 | -0.676 | 43.602 | 36.694 | 1.00 | 40.15 | 1DIK2833 |
| ATOM | 2742 | C   | GLU | 364 | -0.961 | 43.550 | 35.199 | 1.00 | 41.61 | 1DIK2834 |
| ATOM | 2743 | O   | GLU | 364 | -1.619 | 42.628 | 34.714 | 1.00 | 42.19 | 1DIK2835 |
| ATOM | 2744 | CB  | GLU | 364 | 0.421  | 42.606 | 37.040 | 1.00 | 39.16 | 1DIK2836 |
| ATOM | 2745 | CG  | GLU | 364 | 0.621  | 42.449 | 38.515 | 1.00 | 45.46 | 1DIK2837 |
| ATOM | 2746 | CD  | GLU | 364 | 1.956  | 41.863 | 38.842 | 1.00 | 46.24 | 1DIK2838 |
| ATOM | 2747 | OE1 | GLU | 364 | 2.953  | 42.609 | 38.751 | 1.00 | 54.58 | 1DIK2839 |
| ATOM | 2748 | OE2 | GLU | 364 | 2.013  | 40.666 | 39.187 | 1.00 | 43.12 | 1DIK2840 |
| ATOM | 2749 | N   | ASN | 365 | -0.475 | 44.540 | 34.466 | 1.00 | 41.88 | 1DIK2841 |
| ATOM | 2750 | CA  | ASN | 365 | -0.727 | 44.587 | 33.037 | 1.00 | 41.03 | 1DIK2842 |
| ATOM | 2751 | C   | ASN | 365 | 0.218  | 43.661 | 32.288 | 1.00 | 39.55 | 1DIK2843 |
| ATOM | 2752 | O   | ASN | 365 | 1.181  | 43.141 | 32.866 | 1.00 | 34.92 | 1DIK2844 |
| ATOM | 2753 | CB  | ASN | 365 | -0.615 | 46.025 | 32.513 | 1.00 | 46.26 | 1DIK2845 |
| ATOM | 2754 | CG  | ASN | 365 | 0.786  | 46.589 | 32.649 | 1.00 | 49.70 | 1DIK2846 |
| ATOM | 2755 | OD1 | ASN | 365 | 1.646  | 46.361 | 31.798 | 1.00 | 52.55 | 1DIK2847 |
| ATOM | 2756 | ND2 | ASN | 365 | 1.024  | 47.323 | 33.719 | 1.00 | 56.03 | 1DIK2848 |
| ATOM | 2757 | N   | ILE | 366 | -0.075 | 43.481 | 30.999 | 1.00 | 38.20 | 1DIK2849 |
| ATOM | 2758 | CA  | ILE | 366 | 0.671  | 42.603 | 30.103 | 1.00 | 36.15 | 1DIK2850 |
| ATOM | 2759 | C   | ILE | 366 | 2.160  | 42.944 | 29.939 | 1.00 | 37.55 | 1DIK2851 |
| ATOM | 2760 | O   | ILE | 366 | 2.947  | 42.107 | 29.489 | 1.00 | 38.87 | 1DIK2852 |

FIG. 8-43

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2761 | CB  | ILE | 366 | -0.068 | 42.489 | 28.713 | 1.00 | 33.38 | 1DIK2853 |
| ATOM | 2762 | CG1 | ILE | 366 | 0.239  | 41.136 | 28.084 | 1.00 | 29.94 | 1DIK2854 |
| ATOM | 2763 | CG2 | ILE | 366 | 0.273  | 43.652 | 27.786 | 1.00 | 24.77 | 1DIK2855 |
| ATOM | 2764 | CD1 | ILE | 366 | -0.332 | 39.987 | 28.874 | 1.00 | 22.62 | 1DIK2856 |
| ATOM | 2765 | N   | THR | 367 | 2.542  | 44.165 | 30.302 | 1.00 | 37.95 | 1DIK2857 |
| ATOM | 2766 | CA  | THR | 367 | 3.944  | 44.592 | 30.243 | 1.00 | 40.36 | 1DIK2858 |
| ATOM | 2767 | C   | THR | 367 | 4.654  | 44.030 | 31.486 | 1.00 | 40.59 | 1DIK2859 |
| ATOM | 2768 | O   | THR | 367 | 5.775  | 43.512 | 31.406 | 1.00 | 40.36 | 1DIK2860 |
| ATOM | 2769 | CB  | THR | 367 | 4.058  | 46.149 | 30.248 | 1.00 | 41.59 | 1DIK2861 |
| ATOM | 2770 | OG1 | THR | 367 | 3.625  | 46.663 | 28.983 | 1.00 | 38.58 | 1DIK2862 |
| ATOM | 2771 | CG2 | THR | 367 | 5.488  | 46.602 | 30.535 | 1.00 | 43.44 | 1DIK2863 |
| ATOM | 2772 | N   | GLN | 368 | 3.985  | 44.135 | 32.630 | 1.00 | 39.60 | 1DIK2864 |
| ATOM | 2773 | CA  | GLN | 368 | 4.532  | 43.647 | 33.880 | 1.00 | 42.39 | 1DIK2865 |
| ATOM | 2774 | C   | GLN | 368 | 4.656  | 42.133 | 33.876 | 1.00 | 43.99 | 1DIK2866 |
| ATOM | 2775 | O   | GLN | 368 | 5.613  | 41.598 | 34.438 | 1.00 | 47.07 | 1DIK2867 |
| ATOM | 2776 | CB  | GLN | 368 | 3.650  | 44.055 | 35.050 | 1.00 | 46.02 | 1DIK2868 |
| ATOM | 2777 | CG  | GLN | 368 | 3.575  | 45.543 | 35.313 | 1.00 | 52.12 | 1DIK2869 |
| ATOM | 2778 | CD  | GLN | 368 | 2.605  | 45.854 | 36.439 | 1.00 | 55.80 | 1DIK2870 |
| ATOM | 2779 | OE1 | GLN | 368 | 1.553  | 46.460 | 36.223 | 1.00 | 53.21 | 1DIK2871 |
| ATOM | 2780 | NE2 | GLN | 368 | 2.953  | 45.432 | 37.649 | 1.00 | 58.79 | 1DIK2872 |
| ATOM | 2781 | N   | THR | 369 | 3.691  | 41.447 | 33.250 | 1.00 | 42.31 | 1DIK2873 |
| ATOM | 2782 | CA  | THR | 369 | 3.691  | 39.980 | 33.195 | 1.00 | 37.86 | 1DIK2874 |
| ATOM | 2783 | C   | THR | 369 | 4.457  | 39.399 | 32.018 | 1.00 | 35.95 | 1DIK2875 |
| ATOM | 2784 | O   | THR | 369 | 4.415  | 38.186 | 31.776 | 1.00 | 32.63 | 1DIK2876 |
| ATOM | 2785 | CB  | THR | 369 | 2.273  | 39.404 | 33.156 | 1.00 | 37.12 | 1DIK2877 |
| ATOM | 2786 | OG1 | THR | 369 | 1.626  | 39.815 | 31.940 | 1.00 | 40.70 | 1DIK2878 |
| ATOM | 2787 | CG2 | THR | 369 | 1.475  | 39.871 | 34.368 | 1.00 | 28.31 | 1DIK2879 |
| ATOM | 2788 | N   | ASP | 370 | 5.149  | 40.269 | 31.291 | 1.00 | 33.39 | 1DIK2880 |
| ATOM | 2789 | CA  | ASP | 370 | 5.954  | 39.864 | 30.153 | 1.00 | 32.87 | 1DIK2881 |
| ATOM | 2790 | C   | ASP | 370 | 5.170  | 39.043 | 29.104 | 1.00 | 31.05 | 1DIK2882 |
| ATOM | 2791 | O   | ASP | 370 | 5.608  | 37.979 | 28.656 | 1.00 | 31.02 | 1DIK2883 |
| ATOM | 2792 | CB  | ASP | 370 | 7.191  | 39.099 | 30.655 | 1.00 | 35.44 | 1DIK2884 |
| ATOM | 2793 | CG  | ASP | 370 | 8.319  | 39.065 | 29.629 | 1.00 | 40.37 | 1DIK2885 |
| ATOM | 2794 | OD1 | ASP | 370 | 8.469  | 40.065 | 28.893 | 1.00 | 35.88 | 1DIK2886 |
| ATOM | 2795 | OD2 | ASP | 370 | 9.052  | 38.043 | 29.558 | 1.00 | 39.79 | 1DIK2887 |
| ATOM | 2796 | N   | GLY | 371 | 4.003  | 39.548 | 28.721 | 1.00 | 29.15 | 1DIK2888 |
| ATOM | 2797 | CA  | GLY | 371 | 3.203  | 38.883 | 27.717 | 1.00 | 26.42 | 1DIK2889 |
| ATOM | 2798 | C   | GLY | 371 | 2.322  | 37.745 | 28.178 | 1.00 | 29.16 | 1DIK2890 |
| ATOM | 2799 | O   | GLY | 371 | 1.686  | 37.105 | 27.350 | 1.00 | 31.15 | 1DIK2891 |
| ATOM | 2800 | N   | PHE | 372 | 2.260  | 37.470 | 29.475 | 1.00 | 29.53 | 1DIK2892 |
| ATOM | 2801 | CA  | PHE | 372 | 1.397  | 36.390 | 29.921 | 1.00 | 26.79 | 1DIK2893 |
| ATOM | 2802 | C   | PHE | 372 | 0.035  | 36.824 | 30.426 | 1.00 | 28.06 | 1DIK2894 |
| ATOM | 2803 | O   | PHE | 372 | -0.065 | 37.740 | 31.243 | 1.00 | 32.94 | 1DIK2895 |
| ATOM | 2804 | CB  | PHE | 372 | 2.038  | 35.542 | 31.025 | 1.00 | 23.34 | 1DIK2896 |
| ATOM | 2805 | CG  | PHE | 372 | 1.130  | 34.436 | 31.508 | 1.00 | 24.56 | 1DIK2897 |
| ATOM | 2806 | CD1 | PHE | 372 | 0.994  | 33.257 | 30.772 | 1.00 | 22.68 | 1DIK2898 |
| ATOM | 2807 | CD2 | PHE | 372 | 0.355  | 34.601 | 32.648 | 1.00 | 22.77 | 1DIK2899 |
| ATOM | 2808 | CE1 | PHE | 372 | 0.095  | 32.268 | 31.161 | 1.00 | 23.69 | 1DIK2900 |
| ATOM | 2809 | CE2 | PHE | 372 | -0.553 | 33.614 | 33.048 | 1.00 | 26.64 | 1DIK2901 |
| ATOM | 2810 | CZ  | PHE | 372 | -0.684 | 32.447 | 32.303 | 1.00 | 24.28 | 1DIK2902 |
| ATOM | 2811 | N   | SER | 373 | -1.006 | 36.149 | 29.941 | 1.00 | 27.69 | 1DIK2903 |
| ATOM | 2812 | CA  | SER | 373 | -2.394 | 36.361 | 30.377 | 1.00 | 24.96 | 1DIK2904 |
| ATOM | 2813 | C   | SER | 373 | -3.191 | 35.201 | 29.772 | 1.00 | 25.82 | 1DIK2905 |
| ATOM | 2814 | O   | SER | 373 | -2.776 | 34.638 | 28.753 | 1.00 | 26.67 | 1DIK2906 |
| ATOM | 2815 | CB  | SER | 373 | -2.945 | 37.716 | 29.914 | 1.00 | 20.86 | 1DIK2907 |
| ATOM | 2816 | OG  | SER | 373 | -3.520 | 37.661 | 28.620 | 1.00 | 26.28 | 1DIK2908 |
| ATOM | 2817 | N   | SER | 374 | -4.310 | 34.820 | 30.378 | 1.00 | 23.66 | 1DIK2909 |
| ATOM | 2818 | CA  | SER | 374 | -5.092 | 33.728 | 29.816 | 1.00 | 23.58 | 1DIK2910 |
| ATOM | 2819 | C   | SER | 374 | -5.576 | 34.063 | 28.418 | 1.00 | 21.38 | 1DIK2911 |
| ATOM | 2820 | O   | SER | 374 | -5.596 | 33.201 | 27.552 | 1.00 | 24.01 | 1DIK2912 |
| ATOM | 2821 | CB  | SER | 374 | -6.295 | 33.404 | 30.688 | 1.00 | 24.78 | 1DIK2913 |
| ATOM | 2822 | OG  | SER | 374 | -5.868 | 32.729 | 31.846 | 1.00 | 36.24 | 1DIK2914 |
| ATOM | 2823 | N   | ALA | 375 | -5.965 | 35.316 | 28.209 | 1.00 | 19.17 | 1DIK2915 |
| ATOM | 2824 | CA  | ALA | 375 | -6.462 | 35.774 | 26.919 | 1.00 | 18.77 | 1DIK2916 |
| ATOM | 2825 | C   | ALA | 375 | -5.377 | 35.768 | 25.839 | 1.00 | 19.10 | 1DIK2917 |

FIG. 8-44

|      |      |     |     |     |         |        |        |      |       |          |
|------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM | 2826 | O   | ALA | 375 | -5.674  | 35.603 | 24.662 | 1.00 | 17.13 | 1DIK2918 |
| ATOM | 2827 | CB  | ALA | 375 | -7.066  | 37.176 | 27.060 | 1.00 | 17.12 | 1DIK2919 |
| ATOM | 2828 | N   | TRP | 376 | -4.124  | 35.948 | 26.241 | 1.00 | 18.21 | 1DIK2920 |
| ATOM | 2829 | CA  | TRP | 376 | -3.028  | 35.956 | 25.285 | 1.00 | 20.78 | 1DIK2921 |
| ATOM | 2830 | C   | TRP | 376 | -2.419  | 34.585 | 25.036 | 1.00 | 22.76 | 1DIK2922 |
| ATOM | 2831 | O   | TRP | 376 | -1.724  | 34.391 | 24.032 | 1.00 | 24.41 | 1DIK2923 |
| ATOM | 2832 | CB  | TRP | 376 | -1.922  | 36.932 | 25.720 | 1.00 | 20.50 | 1DIK2924 |
| ATOM | 2833 | CG  | TRP | 376 | -2.236  | 38.359 | 25.406 | 1.00 | 21.91 | 1DIK2925 |
| ATOM | 2834 | CD1 | TRP | 376 | -3.465  | 38.941 | 25.432 | 1.00 | 21.75 | 1DIK2926 |
| ATOM | 2835 | CD2 | TRP | 376 | -1.309  | 39.389 | 25.017 | 1.00 | 23.53 | 1DIK2927 |
| ATOM | 2836 | NE1 | TRP | 376 | -3.368  | 40.265 | 25.085 | 1.00 | 23.80 | 1DIK2928 |
| ATOM | 2837 | CE2 | TRP | 376 | -2.060  | 40.572 | 24.824 | 1.00 | 24.79 | 1DIK2929 |
| ATOM | 2838 | CE3 | TRP | 376 | 0.082   | 39.429 | 24.814 | 1.00 | 26.46 | 1DIK2930 |
| ATOM | 2839 | CZ2 | TRP | 376 | -1.468  | 41.794 | 24.435 | 1.00 | 25.72 | 1DIK2931 |
| ATOM | 2840 | CZ3 | TRP | 376 | 0.676   | 40.649 | 24.425 | 1.00 | 24.82 | 1DIK2932 |
| ATOM | 2841 | CH2 | TRP | 376 | -0.106  | 41.812 | 24.242 | 1.00 | 24.72 | 1DIK2933 |
| ATOM | 2842 | N   | THR | 377 | -2.670  | 33.631 | 25.931 | 1.00 | 23.05 | 1DIK2934 |
| ATOM | 2843 | CA  | THR | 377 | -2.105  | 32.296 | 25.770 | 1.00 | 20.73 | 1DIK2935 |
| ATOM | 2844 | C   | THR | 377 | -3.128  | 31.212 | 25.438 | 1.00 | 21.78 | 1DIK2936 |
| ATOM | 2845 | O   | THR | 377 | -2.917  | 30.422 | 24.499 | 1.00 | 22.28 | 1DIK2937 |
| ATOM | 2846 | CB  | THR | 377 | -1.282  | 31.891 | 27.015 | 1.00 | 21.05 | 1DIK2938 |
| ATOM | 2847 | OG1 | THR | 377 | -2.125  | 31.885 | 28.181 | 1.00 | 20.07 | 1DIK2939 |
| ATOM | 2848 | OG2 | THR | 377 | -0.122  | 32.871 | 27.215 | 1.00 | 17.56 | 1DIK2940 |
| ATOM | 2849 | N   | VAL | 378 | -4.232  | 31.177 | 26.187 | 1.00 | 19.66 | 1DIK2941 |
| ATOM | 2850 | CA  | VAL | 378 | -5.266  | 30.173 | 25.960 | 1.00 | 17.69 | 1DIK2942 |
| ATOM | 2851 | C   | VAL | 378 | -6.712  | 30.611 | 25.663 | 1.00 | 19.05 | 1DIK2943 |
| ATOM | 2852 | O   | VAL | 378 | -7.657  | 30.160 | 26.323 | 1.00 | 18.97 | 1DIK2944 |
| ATOM | 2853 | CB  | VAL | 378 | -5.290  | 29.124 | 27.103 | 1.00 | 19.46 | 1DIK2945 |
| ATOM | 2854 | CG1 | VAL | 378 | -4.018  | 28.291 | 27.061 | 1.00 | 16.35 | 1DIK2946 |
| ATOM | 2855 | CG2 | VAL | 378 | -5.461  | 29.811 | 28.459 | 1.00 | 17.47 | 1DIK2947 |
| ATOM | 2856 | N   | PRO | 379 | -6.909  | 31.510 | 24.681 | 1.00 | 19.03 | 1DIK2948 |
| ATOM | 2857 | CA  | PRO | 379 | -8.300  | 31.878 | 24.405 | 1.00 | 17.80 | 1DIK2949 |
| ATOM | 2858 | C   | PRO | 379 | -8.910  | 30.654 | 23.696 | 1.00 | 19.39 | 1DIK2950 |
| ATOM | 2859 | O   | PRO | 379 | -8.215  | 29.655 | 23.472 | 1.00 | 21.31 | 1DIK2951 |
| ATOM | 2860 | CB  | PRO | 379 | -8.149  | 33.045 | 23.438 | 1.00 | 16.10 | 1DIK2952 |
| ATOM | 2861 | CG  | PRO | 379 | -6.877  | 32.691 | 22.677 | 1.00 | 17.21 | 1DIK2953 |
| ATOM | 2862 | CD  | PRO | 379 | -5.979  | 32.249 | 23.798 | 1.00 | 19.06 | 1DIK2954 |
| ATOM | 2863 | N   | PHE | 380 | -10.188 | 30.704 | 23.344 | 1.00 | 18.52 | 1DIK2955 |
| ATOM | 2864 | CA  | PHE | 380 | -10.784 | 29.588 | 22.608 | 1.00 | 18.85 | 1DIK2956 |
| ATOM | 2865 | C   | PHE | 380 | -10.052 | 29.506 | 21.263 | 1.00 | 21.10 | 1DIK2957 |
| ATOM | 2866 | O   | PHE | 380 | -9.733  | 30.535 | 20.669 | 1.00 | 24.26 | 1DIK2958 |
| ATOM | 2867 | CB  | PHE | 380 | -12.260 | 29.843 | 22.329 | 1.00 | 17.78 | 1DIK2959 |
| ATOM | 2868 | CG  | PHE | 380 | -13.150 | 29.637 | 23.509 | 1.00 | 20.97 | 1DIK2960 |
| ATOM | 2869 | CD1 | PHE | 380 | -13.089 | 28.461 | 24.247 | 1.00 | 18.51 | 1DIK2961 |
| ATOM | 2870 | CD2 | PHE | 380 | -14.084 | 30.615 | 23.868 | 1.00 | 22.13 | 1DIK2962 |
| ATOM | 2871 | CE1 | PHE | 380 | -13.945 | 28.252 | 25.327 | 1.00 | 23.16 | 1DIK2963 |
| ATOM | 2872 | CE2 | PHE | 380 | -14.942 | 30.419 | 24.941 | 1.00 | 20.92 | 1DIK2964 |
| ATOM | 2873 | CZ  | PHE | 380 | -14.874 | 29.229 | 25.677 | 1.00 | 18.80 | 1DIK2965 |
| ATOM | 2874 | N   | ALA | 381 | -9.790  | 28.296 | 20.785 | 1.00 | 19.83 | 1DIK2966 |
| ATOM | 2875 | CA  | ALA | 381 | -9.106  | 28.103 | 19.514 | 1.00 | 17.83 | 1DIK2967 |
| ATOM | 2876 | C   | ALA | 381 | -7.703  | 28.731 | 19.476 | 1.00 | 21.42 | 1DIK2968 |
| ATOM | 2877 | O   | ALA | 381 | -7.225  | 29.148 | 18.414 | 1.00 | 23.62 | 1DIK2969 |
| ATOM | 2878 | CB  | ALA | 381 | -9.968  | 28.641 | 18.369 | 1.00 | 16.06 | 1DIK2970 |
| ATOM | 2879 | N   | SER | 382 | -7.035  | 28.809 | 20.622 | 1.00 | 16.01 | 1DIK2971 |
| ATOM | 2880 | CA  | SER | 382 | -5.699  | 29.359 | 20.625 | 1.00 | 16.41 | 1DIK2972 |
| ATOM | 2881 | C   | SER | 382 | -4.814  | 28.403 | 19.850 | 1.00 | 16.99 | 1DIK2973 |
| ATOM | 2882 | O   | SER | 382 | -5.165  | 27.240 | 19.674 | 1.00 | 21.80 | 1DIK2974 |
| ATOM | 2883 | CB  | SER | 382 | -5.170  | 29.462 | 22.046 | 1.00 | 18.69 | 1DIK2975 |
| ATOM | 2884 | OG  | SER | 382 | -5.083  | 28.174 | 22.612 | 1.00 | 19.41 | 1DIK2976 |
| ATOM | 2885 | N   | ARG | 383 | -3.666  | 28.882 | 19.383 | 1.00 | 19.86 | 1DIK2977 |
| ATOM | 2886 | CA  | ARG | 383 | -2.724  | 28.025 | 18.678 | 1.00 | 16.82 | 1DIK2978 |
| ATOM | 2887 | C   | ARG | 383 | -1.299  | 28.454 | 18.979 | 1.00 | 19.46 | 1DIK2979 |
| ATOM | 2888 | O   | ARG | 383 | -1.000  | 29.648 | 19.103 | 1.00 | 22.02 | 1DIK2980 |
| ATOM | 2889 | CB  | ARG | 383 | -2.971  | 28.002 | 17.153 | 1.00 | 17.09 | 1DIK2981 |
| ATOM | 2890 | CG  | ARG | 383 | -2.591  | 29.257 | 16.352 | 1.00 | 17.29 | 1DIK2982 |
| ATOM | 2891 | CD  | ARG | 383 | -3.451  | 30.487 | 16.688 | 1.00 | 16.60 | 1DIK2983 |

FIG. 8-45

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2892 | NE  | ARG | 383 | -4.896 | 30.223 | 16.669 | 1.00 | 15.07 | 1DIK2984 |
| ATOM | 2893 | CZ  | ARG | 383 | -5.716 | 30.480 | 15.645 | 1.00 | 14.92 | 1DIK2985 |
| ATOM | 2894 | NH1 | ARG | 383 | -5.272 | 31.002 | 14.508 | 1.00 | 8.26  | 1DIK2986 |
| ATOM | 2895 | NH2 | ARG | 383 | -7.005 | 30.209 | 15.757 | 1.00 | 12.00 | 1DIK2987 |
| ATOM | 2896 | N   | LEU | 384 | -0.432 | 27.456 | 19.113 | 1.00 | 20.14 | 1DIK2988 |
| ATOM | 2897 | CA  | LEU | 384 | 0.982  | 27.640 | 19.361 | 1.00 | 15.15 | 1DIK2989 |
| ATOM | 2898 | C   | LEU | 384 | 1.632  | 26.976 | 18.156 | 1.00 | 17.51 | 1DIK2990 |
| ATOM | 2899 | O   | LEU | 384 | 1.239  | 25.859 | 17.776 | 1.00 | 17.66 | 1DIK2991 |
| ATOM | 2900 | CB  | LEU | 384 | 1.384  | 26.904 | 20.641 | 1.00 | 14.47 | 1DIK2992 |
| ATOM | 2901 | CG  | LEU | 384 | 2.834  | 26.416 | 20.797 | 1.00 | 23.97 | 1DIK2993 |
| ATOM | 2902 | CD1 | LEU | 384 | 3.761  | 27.555 | 21.205 | 1.00 | 22.30 | 1DIK2994 |
| ATOM | 2903 | CD2 | LEU | 384 | 2.880  | 25.312 | 21.859 | 1.00 | 26.10 | 1DIK2995 |
| ATOM | 2904 | N   | TYR | 385 | 2.601  | 27.658 | 17.546 | 1.00 | 17.61 | 1DIK2996 |
| ATOM | 2905 | CA  | TYR | 385 | 3.336  | 27.110 | 16.402 | 1.00 | 14.96 | 1DIK2997 |
| ATOM | 2906 | C   | TYR | 385 | 4.794  | 26.962 | 16.803 | 1.00 | 17.08 | 1DIK2998 |
| ATOM | 2907 | O   | TYR | 385 | 5.379  | 27.860 | 17.428 | 1.00 | 15.24 | 1DIK2999 |
| ATOM | 2908 | CB  | TYR | 385 | 3.341  | 28.047 | 15.186 | 1.00 | 12.27 | 1DIK3000 |
| ATOM | 2909 | CG  | TYR | 385 | 2.021  | 28.338 | 14.532 | 1.00 | 14.64 | 1DIK3001 |
| ATOM | 2910 | CD1 | TYR | 385 | 1.004  | 27.383 | 14.479 | 1.00 | 15.16 | 1DIK3002 |
| ATOM | 2911 | CD2 | TYR | 385 | 1.795  | 29.580 | 13.942 | 1.00 | 17.04 | 1DIK3003 |
| ATOM | 2912 | CE1 | TYR | 385 | -0.209 | 27.657 | 13.854 | 1.00 | 16.98 | 1DIK3004 |
| ATOM | 2913 | CE2 | TYR | 385 | 0.584  | 29.870 | 13.309 | 1.00 | 18.46 | 1DIK3005 |
| ATOM | 2914 | CZ  | TYR | 385 | -0.418 | 28.910 | 13.265 | 1.00 | 21.91 | 1DIK3006 |
| ATOM | 2915 | OH  | TYR | 385 | -1.620 | 29.216 | 12.637 | 1.00 | 13.55 | 1DIK3007 |
| ATOM | 2916 | N   | VAL | 386 | 5.381  | 25.829 | 16.448 | 1.00 | 18.39 | 1DIK3008 |
| ATOM | 2917 | CA  | VAL | 386 | 6.793  | 25.606 | 16.681 | 1.00 | 16.56 | 1DIK3009 |
| ATOM | 2918 | C   | VAL | 386 | 7.285  | 25.311 | 15.279 | 1.00 | 17.90 | 1DIK3010 |
| ATOM | 2919 | O   | VAL | 386 | 6.893  | 24.298 | 14.680 | 1.00 | 20.76 | 1DIK3011 |
| ATOM | 2920 | CB  | VAL | 386 | 7.067  | 24.404 | 17.577 | 1.00 | 16.14 | 1DIK3012 |
| ATOM | 2921 | CG1 | VAL | 386 | 8.572  | 24.270 | 17.787 | 1.00 | 6.88  | 1DIK3013 |
| ATOM | 2922 | CG2 | VAL | 386 | 6.346  | 24.565 | 18.910 | 1.00 | 15.11 | 1DIK3014 |
| ATOM | 2923 | N   | GLU | 387 | 8.116  | 26.198 | 14.745 | 1.00 | 17.38 | 1DIK3015 |
| ATOM | 2924 | CA  | GLU | 387 | 8.656  | 26.029 | 13.400 | 1.00 | 19.62 | 1DIK3016 |
| ATOM | 2925 | C   | GLU | 387 | 10.169 | 25.935 | 13.407 | 1.00 | 19.53 | 1DIK3017 |
| ATOM | 2926 | O   | GLU | 387 | 10.834 | 26.508 | 14.269 | 1.00 | 21.49 | 1DIK3018 |
| ATOM | 2927 | CB  | GLU | 387 | 8.211  | 27.185 | 12.488 | 1.00 | 19.65 | 1DIK3019 |
| ATOM | 2928 | CG  | GLU | 387 | 8.456  | 28.572 | 13.064 | 1.00 | 24.89 | 1DIK3020 |
| ATOM | 2929 | CD  | GLU | 387 | 7.839  | 29.707 | 12.237 | 1.00 | 25.32 | 1DIK3021 |
| ATOM | 2930 | OE1 | GLU | 387 | 6.675  | 29.590 | 11.802 | 1.00 | 18.28 | 1DIK3022 |
| ATOM | 2931 | OE2 | GLU | 387 | 8.531  | 30.726 | 12.030 | 1.00 | 24.15 | 1DIK3023 |
| ATOM | 2932 | N   | MET | 388 | 10.708 | 25.196 | 12.448 | 1.00 | 22.89 | 1DIK3024 |
| ATOM | 2933 | CA  | MET | 388 | 12.148 | 25.047 | 12.306 | 1.00 | 24.50 | 1DIK3025 |
| ATOM | 2934 | C   | MET | 388 | 12.420 | 25.506 | 10.872 | 1.00 | 25.97 | 1DIK3026 |
| ATOM | 2935 | O   | MET | 388 | 11.629 | 25.226 | 9.962  | 1.00 | 24.86 | 1DIK3027 |
| ATOM | 2936 | CB  | MET | 388 | 12.564 | 23.596 | 12.542 | 1.00 | 24.86 | 1DIK3028 |
| ATOM | 2937 | CG  | MET | 388 | 14.045 | 23.405 | 12.736 | 1.00 | 28.49 | 1DIK3029 |
| ATOM | 2938 | SD  | MET | 388 | 14.420 | 21.945 | 13.737 | 1.00 | 32.00 | 1DIK3030 |
| ATOM | 2939 | CE  | MET | 388 | 13.569 | 20.648 | 12.835 | 1.00 | 25.36 | 1DIK3031 |
| ATOM | 2940 | N   | MET | 389 | 13.517 | 26.233 | 10.673 | 1.00 | 26.04 | 1DIK3032 |
| ATOM | 2941 | CA  | MET | 389 | 13.863 | 26.749 | 9.351  | 1.00 | 27.38 | 1DIK3033 |
| ATOM | 2942 | C   | MET | 389 | 15.354 | 26.673 | 9.063  | 1.00 | 31.05 | 1DIK3034 |
| ATOM | 2943 | O   | MET | 389 | 16.186 | 26.532 | 9.970  | 1.00 | 28.80 | 1DIK3035 |
| ATOM | 2944 | CB  | MET | 389 | 13.388 | 28.200 | 9.188  | 1.00 | 21.65 | 1DIK3036 |
| ATOM | 2945 | CG  | MET | 389 | 13.986 | 29.170 | 10.190 | 1.00 | 20.31 | 1DIK3037 |
| ATOM | 2946 | SD  | MET | 389 | 13.301 | 30.826 | 10.047 | 1.00 | 27.29 | 1DIK3038 |
| ATOM | 2947 | CE  | MET | 389 | 11.760 | 30.668 | 10.980 | 1.00 | 23.61 | 1DIK3039 |
| ATOM | 2948 | N   | GLN | 390 | 15.683 | 26.752 | 7.782  | 1.00 | 33.50 | 1DIK3040 |
| ATOM | 2949 | CA  | GLN | 390 | 17.064 | 26.722 | 7.352  | 1.00 | 39.30 | 1DIK3041 |
| ATOM | 2950 | C   | GLN | 390 | 17.218 | 28.001 | 6.560  | 1.00 | 37.68 | 1DIK3042 |
| ATOM | 2951 | O   | GLN | 390 | 16.399 | 28.306 | 5.687  | 1.00 | 38.67 | 1DIK3043 |
| ATOM | 2952 | CB  | GLN | 390 | 17.336 | 25.488 | 6.493  | 1.00 | 42.00 | 1DIK3044 |
| ATOM | 2953 | CG  | GLN | 390 | 18.614 | 24.779 | 6.890  | 1.00 | 53.74 | 1DIK3045 |
| ATOM | 2954 | CD  | GLN | 390 | 18.668 | 23.361 | 6.364  | 1.00 | 63.83 | 1DIK3046 |
| ATOM | 2955 | OE1 | GLN | 390 | 18.355 | 23.105 | 5.191  | 1.00 | 68.11 | 1DIK3047 |
| ATOM | 2956 | NE2 | GLN | 390 | 19.065 | 22.421 | 7.224  | 1.00 | 63.91 | 1DIK3048 |

FIG. 8-46

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 2957 | N   | CYS | 391 | 18.250 | 28.767 | 6.876  | 1.00 | 40.00 | 1DIK3049 |
| ATOM | 2958 | CA  | CYS | 391 | 18.462 | 30.027 | 6.186  | 1.00 | 45.20 | 1DIK3050 |
| ATOM | 2959 | C   | CYS | 391 | 19.823 | 30.061 | 5.521  | 1.00 | 49.70 | 1DIK3051 |
| ATOM | 2960 | O   | CYS | 391 | 20.750 | 29.371 | 5.932  | 1.00 | 49.75 | 1DIK3052 |
| ATOM | 2961 | CB  | CYS | 391 | 18.301 | 31.213 | 7.149  | 1.00 | 39.14 | 1DIK3053 |
| ATOM | 2962 | SG  | CYS | 391 | 16.773 | 31.195 | 8.142  | 1.00 | 30.19 | 1DIK3054 |
| ATOM | 2963 | N   | GLN | 392 | 19.917 | 30.883 | 4.488  | 1.00 | 59.92 | 1DIK3055 |
| ATOM | 2964 | CA  | GLN | 392 | 21.121 | 31.044 | 3.685  | 1.00 | 68.58 | 1DIK3056 |
| ATOM | 2965 | C   | GLN | 392 | 22.430 | 31.262 | 4.455  | 1.00 | 71.02 | 1DIK3057 |
| ATOM | 2966 | O   | GLN | 392 | 23.442 | 30.618 | 4.166  | 1.00 | 72.41 | 1DIK3058 |
| ATOM | 2967 | CB  | GLN | 392 | 20.883 | 32.199 | 2.724  | 1.00 | 73.43 | 1DIK3059 |
| ATOM | 2968 | CG  | GLN | 392 | 21.760 | 32.223 | 1.498  | 1.00 | 80.79 | 1DIK3060 |
| ATOM | 2969 | CD  | GLN | 392 | 21.489 | 33.465 | 0.686  | 1.00 | 83.73 | 1DIK3061 |
| ATOM | 2970 | OE1 | GLN | 392 | 20.888 | 34.420 | 1.193  | 1.00 | 85.73 | 1DIK3062 |
| ATOM | 2971 | NE2 | GLN | 392 | 21.920 | 33.471 | -0.571 | 1.00 | 84.40 | 1DIK3063 |
| ATOM | 2972 | N   | ALA | 393 | 22.408 | 32.169 | 5.425  | 1.00 | 72.05 | 1DIK3064 |
| ATOM | 2973 | CA  | ALA | 393 | 23.604 | 32.467 | 6.207  | 1.00 | 74.09 | 1DIK3065 |
| ATOM | 2974 | C   | ALA | 393 | 23.989 | 31.392 | 7.241  | 1.00 | 74.58 | 1DIK3066 |
| ATOM | 2975 | O   | ALA | 393 | 25.159 | 31.020 | 7.345  | 1.00 | 74.91 | 1DIK3067 |
| ATOM | 2976 | CB  | ALA | 393 | 23.440 | 33.820 | 6.895  | 1.00 | 75.97 | 1DIK3068 |
| ATOM | 2977 | N   | GLU | 394 | 23.007 | 30.905 | 7.998  | 1.00 | 73.28 | 1DIK3069 |
| ATOM | 2978 | CA  | GLU | 394 | 23.229 | 29.902 | 9.041  | 1.00 | 72.21 | 1DIK3070 |
| ATOM | 2979 | C   | GLU | 394 | 23.418 | 28.461 | 8.528  | 1.00 | 70.24 | 1DIK3071 |
| ATOM | 2980 | O   | GLU | 394 | 22.973 | 28.131 | 7.437  | 1.00 | 72.41 | 1DIK3072 |
| ATOM | 2981 | CB  | GLU | 394 | 22.055 | 29.955 | 10.018 | 1.00 | 74.31 | 1DIK3073 |
| ATOM | 2982 | CG  | GLU | 394 | 22.266 | 29.170 | 11.307 | 1.00 | 81.75 | 1DIK3074 |
| ATOM | 2983 | CD  | GLU | 394 | 23.361 | 29.761 | 12.187 | 1.00 | 84.86 | 1DIK3075 |
| ATOM | 2984 | OE1 | GLU | 394 | 23.242 | 30.948 | 12.578 | 1.00 | 86.06 | 1DIK3076 |
| ATOM | 2985 | OE2 | GLU | 394 | 24.338 | 29.038 | 12.489 | 1.00 | 86.34 | 1DIK3077 |
| ATOM | 2986 | N   | GLN | 395 | 24.077 | 27.608 | 9.314  | 1.00 | 67.62 | 1DIK3078 |
| ATOM | 2987 | CA  | GLN | 395 | 24.296 | 26.203 | 8.924  | 1.00 | 67.27 | 1DIK3079 |
| ATOM | 2988 | C   | GLN | 395 | 23.313 | 25.261 | 9.625  | 1.00 | 64.99 | 1DIK3080 |
| ATOM | 2989 | O   | GLN | 395 | 22.818 | 24.294 | 9.034  | 1.00 | 65.93 | 1DIK3081 |
| ATOM | 2990 | CB  | GLN | 395 | 25.704 | 25.752 | 9.288  | 1.00 | 70.58 | 1DIK3082 |
| ATOM | 2991 | CG  | GLN | 395 | 26.799 | 26.627 | 8.760  | 1.00 | 80.49 | 1DIK3083 |
| ATOM | 2992 | CD  | GLN | 395 | 28.085 | 26.437 | 9.542  | 1.00 | 86.58 | 1DIK3084 |
| ATOM | 2993 | OE1 | GLN | 395 | 28.185 | 25.537 | 10.385 | 1.00 | 87.92 | 1DIK3085 |
| ATOM | 2994 | NE2 | GLN | 395 | 29.077 | 27.280 | 9.272  | 1.00 | 90.05 | 1DIK3086 |
| ATOM | 2995 | N   | GLU | 396 | 23.051 | 25.546 | 10.900 | 1.00 | 59.17 | 1DIK3087 |
| ATOM | 2996 | CA  | GLU | 396 | 22.127 | 24.760 | 11.707 | 1.00 | 52.18 | 1DIK3088 |
| ATOM | 2997 | C   | GLU | 396 | 20.694 | 25.250 | 11.536 | 1.00 | 45.17 | 1DIK3089 |
| ATOM | 2998 | O   | GLU | 396 | 20.450 | 26.432 | 11.232 | 1.00 | 42.88 | 1DIK3090 |
| ATOM | 2999 | CB  | GLU | 396 | 22.442 | 24.917 | 13.192 | 1.00 | 58.64 | 1DIK3091 |
| ATOM | 3000 | CG  | GLU | 396 | 23.637 | 24.200 | 13.749 | 1.00 | 65.48 | 1DIK3092 |
| ATOM | 3001 | CD  | GLU | 396 | 23.588 | 24.204 | 15.279 | 1.00 | 72.96 | 1DIK3093 |
| ATOM | 3002 | OE1 | GLU | 396 | 22.721 | 23.485 | 15.849 | 1.00 | 75.18 | 1DIK3094 |
| ATOM | 3003 | OE2 | GLU | 396 | 24.402 | 24.925 | 15.908 | 1.00 | 73.08 | 1DIK3095 |
| ATOM | 3004 | N   | PRO | 397 | 19.723 | 24.344 | 11.708 | 1.00 | 37.24 | 1DIK3096 |
| ATOM | 3005 | CA  | PRO | 397 | 18.346 | 24.817 | 11.572 | 1.00 | 33.03 | 1DIK3097 |
| ATOM | 3006 | C   | PRO | 397 | 18.015 | 25.696 | 12.806 | 1.00 | 27.77 | 1DIK3098 |
| ATOM | 3007 | O   | PRO | 397 | 18.547 | 25.491 | 13.912 | 1.00 | 23.86 | 1DIK3099 |
| ATOM | 3008 | CB  | PRO | 397 | 17.537 | 23.515 | 11.499 | 1.00 | 30.60 | 1DIK3100 |
| ATOM | 3009 | CG  | PRO | 397 | 18.343 | 22.572 | 12.325 | 1.00 | 34.10 | 1DIK3101 |
| ATOM | 3010 | CD  | PRO | 397 | 19.779 | 22.897 | 11.975 | 1.00 | 33.21 | 1DIK3102 |
| ATOM | 3011 | N   | LEU | 398 | 17.151 | 26.680 | 12.599 | 1.00 | 24.89 | 1DIK3103 |
| ATOM | 3012 | CA  | LEU | 398 | 16.743 | 27.603 | 13.644 | 1.00 | 22.58 | 1DIK3104 |
| ATOM | 3013 | C   | LEU | 398 | 15.287 | 27.333 | 14.072 | 1.00 | 23.54 | 1DIK3105 |
| ATOM | 3014 | O   | LEU | 398 | 14.420 | 27.074 | 13.239 | 1.00 | 23.76 | 1DIK3106 |
| ATOM | 3015 | CB  | LEU | 398 | 16.904 | 29.033 | 13.129 | 1.00 | 19.29 | 1DIK3107 |
| ATOM | 3016 | CG  | LEU | 398 | 18.296 | 29.357 | 12.572 | 1.00 | 21.68 | 1DIK3108 |
| ATOM | 3017 | CD1 | LEU | 398 | 18.210 | 30.505 | 11.590 | 1.00 | 21.80 | 1DIK3109 |
| ATOM | 3018 | CD2 | LEU | 398 | 19.252 | 29.681 | 13.695 | 1.00 | 17.36 | 1DIK3110 |
| ATOM | 3019 | N   | VAL | 399 | 15.039 | 27.395 | 15.374 | 1.00 | 23.51 | 1DIK3111 |
| ATOM | 3020 | CA  | VAL | 399 | 13.727 | 27.149 | 15.959 | 1.00 | 23.57 | 1DIK3112 |
| ATOM | 3021 | C   | VAL | 399 | 13.084 | 28.478 | 16.379 | 1.00 | 25.60 | 1DIK3113 |
| ATOM | 3022 | O   | VAL | 399 | 13.767 | 29.398 | 16.832 | 1.00 | 28.79 | 1DIK3114 |

FIG. 8-47



|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 3023 | CB  | VAL | 399 | 13.864 | 26.226 | 17.220 | 1.00 | 23.92 | 1DIK3115 |
| ATOM | 3024 | CG1 | VAL | 399 | 12.510 | 25.978 | 17.867 | 1.00 | 19.35 | 1DIK3116 |
| ATOM | 3025 | CG2 | VAL | 399 | 14.525 | 24.906 | 16.844 | 1.00 | 19.06 | 1DIK3117 |
| ATOM | 3026 | N   | ARG | 400 | 11.770 | 28.576 | 16.223 | 1.00 | 24.81 | 1DIK3118 |
| ATOM | 3027 | CA  | ARG | 400 | 11.038 | 29.766 | 16.612 | 1.00 | 20.32 | 1DIK3119 |
| ATOM | 3028 | C   | ARG | 400 | 9.642  | 29.348 | 17.060 | 1.00 | 20.66 | 1DIK3120 |
| ATOM | 3029 | O   | ARG | 400 | 9.065  | 28.407 | 16.511 | 1.00 | 21.08 | 1DIK3121 |
| ATOM | 3030 | CB  | ARG | 400 | 10.950 | 30.754 | 15.457 | 1.00 | 21.26 | 1DIK3122 |
| ATOM | 3031 | CG  | ARG | 400 | 10.227 | 32.002 | 15.867 | 1.00 | 24.84 | 1DIK3123 |
| ATOM | 3032 | CD  | ARG | 400 | 10.446 | 33.098 | 14.903 | 1.00 | 22.49 | 1DIK3124 |
| ATOM | 3033 | NE  | ARG | 400 | 9.769  | 32.864 | 13.643 | 1.00 | 24.64 | 1DIK3125 |
| ATOM | 3034 | CZ  | ARG | 400 | 9.536  | 33.835 | 12.763 | 1.00 | 33.02 | 1DIK3126 |
| ATOM | 3035 | NH1 | ARG | 400 | 9.930  | 35.079 | 13.042 | 1.00 | 30.42 | 1DIK3127 |
| ATOM | 3036 | NH2 | ARG | 400 | 8.915  | 33.576 | 11.614 | 1.00 | 30.09 | 1DIK3128 |
| ATOM | 3037 | N   | VAL | 401 | 9.109  | 30.044 | 18.058 | 1.00 | 19.00 | 1DIK3129 |
| ATOM | 3038 | CA  | VAL | 401 | 7.795  | 29.757 | 18.606 | 1.00 | 18.61 | 1DIK3130 |
| ATOM | 3039 | C   | VAL | 401 | 6.882  | 30.980 | 18.554 | 1.00 | 21.25 | 1DIK3131 |
| ATOM | 3040 | O   | VAL | 401 | 7.260  | 32.059 | 19.003 | 1.00 | 23.23 | 1DIK3132 |
| ATOM | 3041 | CB  | VAL | 401 | 7.908  | 29.318 | 20.087 | 1.00 | 20.03 | 1DIK3133 |
| ATOM | 3042 | CG1 | VAL | 401 | 6.529  | 29.173 | 20.701 | 1.00 | 17.45 | 1DIK3134 |
| ATOM | 3043 | CG2 | VAL | 401 | 8.673  | 28.006 | 20.195 | 1.00 | 16.44 | 1DIK3135 |
| ATOM | 3044 | N   | LEU | 402 | 5.683  | 30.812 | 18.006 | 1.00 | 20.98 | 1DIK3136 |
| ATOM | 3045 | CA  | LEU | 402 | 4.701  | 31.888 | 17.948 | 1.00 | 17.41 | 1DIK3137 |
| ATOM | 3046 | C   | LEU | 402 | 3.540  | 31.418 | 18.804 | 1.00 | 19.37 | 1DIK3138 |
| ATOM | 3047 | O   | LEU | 402 | 3.165  | 30.249 | 18.728 | 1.00 | 22.64 | 1DIK3139 |
| ATOM | 3048 | CB  | LEU | 402 | 4.206  | 32.128 | 16.519 | 1.00 | 14.63 | 1DIK3140 |
| ATOM | 3049 | CG  | LEU | 402 | 5.213  | 32.709 | 15.523 | 1.00 | 17.85 | 1DIK3141 |
| ATOM | 3050 | CD1 | LEU | 402 | 6.046  | 31.608 | 14.893 | 1.00 | 12.36 | 1DIK3142 |
| ATOM | 3051 | CD2 | LEU | 402 | 4.464  | 33.480 | 14.461 | 1.00 | 15.05 | 1DIK3143 |
| ATOM | 3052 | N   | VAL | 403 | 2.984  | 32.305 | 19.626 | 1.00 | 18.51 | 1DIK3144 |
| ATOM | 3053 | CA  | VAL | 403 | 1.831  | 31.962 | 20.472 | 1.00 | 18.78 | 1DIK3145 |
| ATOM | 3054 | C   | VAL | 403 | 0.710  | 32.925 | 20.081 | 1.00 | 21.06 | 1DIK3146 |
| ATOM | 3055 | O   | VAL | 403 | 0.793  | 34.129 | 20.357 | 1.00 | 20.63 | 1DIK3147 |
| ATOM | 3056 | CB  | VAL | 403 | 2.150  | 32.111 | 21.993 | 1.00 | 17.73 | 1DIK3148 |
| ATOM | 3057 | CG1 | VAL | 403 | 0.904  | 31.836 | 22.840 | 1.00 | 12.73 | 1DIK3149 |
| ATOM | 3058 | CG2 | VAL | 403 | 3.266  | 31.146 | 22.388 | 1.00 | 16.54 | 1DIK3150 |
| ATOM | 3059 | N   | ASN | 404 | -0.327 | 32.397 | 19.429 | 1.00 | 18.48 | 1DIK3151 |
| ATOM | 3060 | CA  | ASN | 404 | -1.455 | 33.216 | 18.967 | 1.00 | 21.00 | 1DIK3152 |
| ATOM | 3061 | C   | ASN | 404 | -0.986 | 34.403 | 18.116 | 1.00 | 21.42 | 1DIK3153 |
| ATOM | 3062 | O   | ASN | 404 | -1.507 | 35.522 | 18.221 | 1.00 | 18.49 | 1DIK3154 |
| ATOM | 3063 | CB  | ASN | 404 | -2.323 | 33.679 | 20.142 | 1.00 | 17.93 | 1DIK3155 |
| ATOM | 3064 | CG  | ASN | 404 | -3.007 | 32.525 | 20.825 | 1.00 | 16.64 | 1DIK3156 |
| ATOM | 3065 | OD1 | ASN | 404 | -3.675 | 31.726 | 20.177 | 1.00 | 18.50 | 1DIK3157 |
| ATOM | 3066 | ND2 | ASN | 404 | -2.841 | 32.421 | 22.132 | 1.00 | 13.25 | 1DIK3158 |
| ATOM | 3067 | N   | ASP | 405 | 0.011  | 34.103 | 17.277 | 1.00 | 20.77 | 1DIK3159 |
| ATOM | 3068 | CA  | ASP | 405 | 0.657  | 35.003 | 16.317 | 1.00 | 21.55 | 1DIK3160 |
| ATOM | 3069 | C   | ASP | 405 | 1.704  | 35.960 | 16.838 | 1.00 | 24.70 | 1DIK3161 |
| ATOM | 3070 | O   | ASP | 405 | 2.244  | 36.765 | 16.078 | 1.00 | 27.69 | 1DIK3162 |
| ATOM | 3071 | CB  | ASP | 405 | -0.374 | 35.753 | 15.481 | 1.00 | 19.33 | 1DIK3163 |
| ATOM | 3072 | CG  | ASP | 405 | -1.249 | 34.821 | 14.694 | 1.00 | 21.06 | 1DIK3164 |
| ATOM | 3073 | OD1 | ASP | 405 | -0.824 | 33.668 | 14.469 | 1.00 | 22.07 | 1DIK3165 |
| ATOM | 3074 | OD2 | ASP | 405 | -2.359 | 35.231 | 14.303 | 1.00 | 23.53 | 1DIK3166 |
| ATOM | 3075 | N   | ARG | 406 | 1.999  | 35.874 | 18.126 | 1.00 | 24.97 | 1DIK3167 |
| ATOM | 3076 | CA  | ARG | 406 | 3.022  | 36.732 | 18.709 | 1.00 | 25.69 | 1DIK3168 |
| ATOM | 3077 | C   | ARG | 406 | 4.317  | 35.917 | 18.738 | 1.00 | 24.24 | 1DIK3169 |
| ATOM | 3078 | O   | ARG | 406 | 4.313  | 34.767 | 19.213 | 1.00 | 24.35 | 1DIK3170 |
| ATOM | 3079 | CB  | ARG | 406 | 2.619  | 37.141 | 20.139 | 1.00 | 26.35 | 1DIK3171 |
| ATOM | 3080 | CG  | ARG | 406 | 3.618  | 38.049 | 20.840 | 1.00 | 26.41 | 1DIK3172 |
| ATOM | 3081 | CD  | ARG | 406 | 3.315  | 38.224 | 22.331 | 1.00 | 28.94 | 1DIK3173 |
| ATOM | 3082 | NE  | ARG | 406 | 4.501  | 38.715 | 23.031 | 1.00 | 32.36 | 1DIK3174 |
| ATOM | 3083 | CZ  | ARG | 406 | 5.099  | 38.092 | 24.047 | 1.00 | 36.19 | 1DIK3175 |
| ATOM | 3084 | NH1 | ARG | 406 | 4.613  | 36.950 | 24.521 | 1.00 | 35.65 | 1DIK3176 |
| ATOM | 3085 | NH2 | ARG | 406 | 6.188  | 38.618 | 24.601 | 1.00 | 38.62 | 1DIK3177 |
| ATOM | 3086 | N   | VAL | 407 | 5.410  | 36.483 | 18.226 | 1.00 | 20.04 | 1DIK3178 |
| ATOM | 3087 | CA  | VAL | 407 | 6.689  | 35.779 | 18.266 | 1.00 | 19.32 | 1DIK3179 |

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 3088 | C   | VAL | 407 | 7.183  | 35.895 | 19.710 | 1.00 | 22.20 | IDIK3180 |
| ATOM | 3089 | O   | VAL | 407 | 7.481  | 36.974 | 20.198 | 1.00 | 26.19 | IDIK3181 |
| ATOM | 3090 | CB  | VAL | 407 | 7.743  | 36.372 | 17.276 | 1.00 | 17.66 | IDIK3182 |
| ATOM | 3091 | CG1 | VAL | 407 | 9.143  | 35.815 | 17.606 | 1.00 | 12.58 | IDIK3183 |
| ATOM | 3092 | CG2 | VAL | 407 | 7.367  | 36.031 | 15.826 | 1.00 | 8.62  | IDIK3184 |
| ATOM | 3093 | N   | VAL | 408 | 7.245  | 34.767 | 20.391 | 1.00 | 27.04 | IDIK3185 |
| ATOM | 3094 | CA  | VAL | 408 | 7.682  | 34.718 | 21.779 | 1.00 | 30.49 | IDIK3186 |
| ATOM | 3095 | C   | VAL | 408 | 9.169  | 34.371 | 21.845 | 1.00 | 33.80 | IDIK3187 |
| ATOM | 3096 | O   | VAL | 408 | 9.576  | 33.273 | 21.468 | 1.00 | 36.38 | IDIK3188 |
| ATOM | 3097 | CB  | VAL | 408 | 6.869  | 33.645 | 22.575 | 1.00 | 27.31 | IDIK3189 |
| ATOM | 3098 | CG1 | VAL | 408 | 7.310  | 33.590 | 24.026 | 1.00 | 26.14 | IDIK3190 |
| ATOM | 3099 | CG2 | VAL | 408 | 5.392  | 33.950 | 22.493 | 1.00 | 25.33 | IDIK3191 |
| ATOM | 3100 | N   | PRO | 409 | 10.007 | 35.312 | 22.298 | 1.00 | 39.45 | IDIK3192 |
| ATOM | 3101 | CA  | PRO | 409 | 11.453 | 35.048 | 22.405 | 1.00 | 39.88 | IDIK3193 |
| ATOM | 3102 | C   | PRO | 409 | 11.740 | 33.855 | 23.348 | 1.00 | 38.92 | IDIK3194 |
| ATOM | 3103 | O   | PRO | 409 | 11.135 | 33.707 | 24.423 | 1.00 | 36.45 | IDIK3195 |
| ATOM | 3104 | CB  | PRO | 409 | 12.005 | 36.368 | 22.948 | 1.00 | 42.97 | IDIK3196 |
| ATOM | 3105 | CG  | PRO | 409 | 10.992 | 37.396 | 22.418 | 1.00 | 44.48 | IDIK3197 |
| ATOM | 3106 | CD  | PRO | 410 | 9.688  | 36.692 | 22.702 | 1.00 | 40.36 | IDIK3198 |
| ATOM | 3107 | N   | LEU | 410 | 12.668 | 33.009 | 22.921 | 1.00 | 38.46 | IDIK3199 |
| ATOM | 3108 | CA  | LEU | 410 | 13.041 | 31.814 | 23.660 | 1.00 | 34.48 | IDIK3200 |
| ATOM | 3109 | C   | LEU | 410 | 13.959 | 32.117 | 24.846 | 1.00 | 33.51 | IDIK3201 |
| ATOM | 3110 | O   | LEU | 410 | 14.710 | 33.092 | 24.839 | 1.00 | 31.11 | IDIK3202 |
| ATOM | 3111 | CB  | LEU | 410 | 13.707 | 30.810 | 22.697 | 1.00 | 32.83 | IDIK3203 |
| ATOM | 3112 | CG  | LEU | 410 | 12.875 | 30.372 | 21.476 | 1.00 | 29.37 | IDIK3204 |
| ATOM | 3113 | CD1 | LEU | 410 | 13.725 | 29.543 | 20.528 | 1.00 | 28.62 | IDIK3205 |
| ATOM | 3114 | CD2 | LEU | 410 | 11.661 | 29.584 | 21.937 | 1.00 | 24.58 | IDIK3206 |
| ATOM | 3115 | N   | HIS | 411 | 13.888 | 31.275 | 25.867 | 1.00 | 32.47 | IDIK3207 |
| ATOM | 3116 | CA  | HIS | 411 | 14.725 | 31.432 | 27.041 | 1.00 | 34.54 | IDIK3208 |
| ATOM | 3117 | C   | HIS | 411 | 15.585 | 30.188 | 27.209 | 1.00 | 33.85 | IDIK3209 |
| ATOM | 3118 | O   | HIS | 411 | 15.168 | 29.088 | 26.854 | 1.00 | 36.81 | IDIK3210 |
| ATOM | 3119 | CB  | HIS | 411 | 13.865 | 31.652 | 28.288 | 1.00 | 40.62 | IDIK3211 |
| ATOM | 3120 | CG  | HIS | 411 | 13.249 | 33.012 | 28.352 | 1.00 | 43.65 | IDIK3212 |
| ATOM | 3121 | ND1 | HIS | 411 | 11.994 | 33.287 | 27.854 | 1.00 | 46.21 | IDIK3213 |
| ATOM | 3122 | CD2 | HIS | 411 | 13.371 | 34.185 | 28.822 | 1.00 | 43.54 | IDIK3214 |
| ATOM | 3123 | CE1 | HIS | 411 | 11.731 | 34.571 | 28.012 | 1.00 | 46.39 | IDIK3215 |
| ATOM | 3124 | NE2 | HIS | 411 | 12.771 | 35.138 | 28.598 | 1.00 | 43.29 | IDIK3216 |
| ATOM | 3125 | N   | GLY | 412 | 16.786 | 30.372 | 27.747 | 1.00 | 32.45 | IDIK3217 |
| ATOM | 3126 | CA  | GLY | 412 | 17.690 | 29.258 | 27.961 | 1.00 | 27.18 | IDIK3218 |
| ATOM | 3127 | C   | GLY | 412 | 18.642 | 29.036 | 26.807 | 1.00 | 28.45 | IDIK3219 |
| ATOM | 3128 | O   | GLY | 412 | 19.530 | 28.180 | 26.880 | 1.00 | 32.18 | IDIK3220 |
| ATOM | 3129 | N   | CYS | 413 | 18.470 | 29.797 | 25.734 | 1.00 | 25.33 | IDIK3221 |
| ATOM | 3130 | CA  | CYS | 413 | 19.334 | 29.669 | 24.570 | 1.00 | 24.44 | IDIK3222 |
| ATOM | 3131 | C   | CYS | 413 | 19.542 | 31.073 | 24.032 | 1.00 | 23.08 | IDIK3223 |
| ATOM | 3132 | O   | CYS | 413 | 18.723 | 31.967 | 24.278 | 1.00 | 23.15 | IDIK3224 |
| ATOM | 3133 | CB  | CYS | 413 | 18.691 | 28.751 | 23.511 | 1.00 | 26.97 | IDIK3225 |
| ATOM | 3134 | SG  | CYS | 413 | 17.010 | 29.217 | 22.959 | 1.00 | 26.06 | IDIK3226 |
| ATOM | 3135 | N   | PRO | 414 | 20.640 | 31.289 | 23.299 | 1.00 | 22.53 | IDIK3227 |
| ATOM | 3136 | CA  | PRO | 414 | 21.000 | 32.586 | 22.706 | 1.00 | 25.51 | IDIK3228 |
| ATOM | 3137 | C   | PRO | 414 | 20.086 | 32.989 | 21.542 | 1.00 | 26.43 | IDIK3229 |
| ATOM | 3138 | O   | PRO | 414 | 20.303 | 32.531 | 20.415 | 1.00 | 24.37 | IDIK3230 |
| ATOM | 3139 | CB  | PRO | 414 | 22.438 | 32.359 | 22.202 | 1.00 | 27.32 | IDIK3231 |
| ATOM | 3140 | CG  | PRO | 414 | 22.904 | 31.083 | 22.891 | 1.00 | 26.89 | IDIK3232 |
| ATOM | 3141 | CD  | PRO | 414 | 21.649 | 30.264 | 22.972 | 1.00 | 25.24 | IDIK3233 |
| ATOM | 3142 | N   | VAL | 415 | 19.080 | 33.829 | 21.801 | 1.00 | 24.39 | IDIK3234 |
| ATOM | 3143 | CA  | VAL | 415 | 18.180 | 34.258 | 20.732 | 1.00 | 23.17 | IDIK3235 |
| ATOM | 3144 | C   | VAL | 415 | 18.762 | 35.328 | 19.817 | 1.00 | 23.33 | IDIK3236 |
| ATOM | 3145 | O   | VAL | 415 | 19.498 | 36.213 | 20.262 | 1.00 | 23.01 | IDIK3237 |
| ATOM | 3146 | CB  | VAL | 415 | 16.827 | 34.801 | 21.256 | 1.00 | 20.98 | IDIK3238 |
| ATOM | 3147 | CG1 | VAL | 415 | 15.937 | 33.675 | 21.666 | 1.00 | 22.55 | IDIK3239 |
| ATOM | 3148 | CG2 | VAL | 415 | 17.051 | 35.763 | 22.391 | 1.00 | 26.59 | IDIK3240 |
| ATOM | 3149 | N   | ASP | 416 | 18.434 | 35.236 | 18.532 | 1.00 | 21.89 | IDIK3241 |
| ATOM | 3150 | CA  | ASP | 416 | 18.881 | 36.224 | 17.569 | 1.00 | 23.29 | IDIK3242 |
| ATOM | 3151 | C   | ASP | 416 | 17.798 | 37.307 | 17.436 | 1.00 | 25.15 | IDIK3243 |
| ATOM | 3152 | O   | ASP | 416 | 16.739 | 37.209 | 18.070 | 1.00 | 23.71 | IDIK3244 |

FIG. 8-49



|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 3153 | CB  | ASP | 416 | 19.265 | 35.579 | 16.207 | 1.00 | 22.64 | 1DIK3245 |
| ATOM | 3154 | CG  | ASP | 416 | 18.085 | 34.947 | 15.445 | 1.00 | 25.90 | 1DIK3246 |
| ATOM | 3155 | OD1 | ASP | 416 | 16.896 | 35.237 | 15.713 | 1.00 | 28.90 | 1DIK3247 |
| ATOM | 3156 | OD2 | ASP | 416 | 18.366 | 34.135 | 14.540 | 1.00 | 24.59 | 1DIK3248 |
| ATOM | 3157 | N   | ALA | 417 | 18.062 | 38.327 | 16.619 | 1.00 | 25.89 | 1DIK3249 |
| ATOM | 3158 | CA  | ALA | 417 | 17.137 | 39.443 | 16.411 | 1.00 | 26.04 | 1DIK3250 |
| ATOM | 3159 | C   | ALA | 417 | 15.717 | 39.053 | 15.986 | 1.00 | 27.35 | 1DIK3251 |
| ATOM | 3160 | O   | ALA | 417 | 14.779 | 39.837 | 16.165 | 1.00 | 28.16 | 1DIK3252 |
| ATOM | 3161 | CB  | ALA | 417 | 17.738 | 40.443 | 15.403 | 1.00 | 22.45 | 1DIK3253 |
| ATOM | 3162 | N   | LEU | 418 | 15.553 | 37.852 | 15.428 | 1.00 | 28.60 | 1DIK3254 |
| ATOM | 3163 | CA  | LEU | 418 | 14.238 | 37.384 | 14.991 | 1.00 | 26.36 | 1DIK3255 |
| ATOM | 3164 | C   | LEU | 418 | 13.552 | 36.391 | 15.952 | 1.00 | 26.54 | 1DIK3256 |
| ATOM | 3165 | O   | LEU | 418 | 12.533 | 35.795 | 15.608 | 1.00 | 26.72 | 1DIK3257 |
| ATOM | 3166 | CB  | LEU | 418 | 14.329 | 36.829 | 13.564 | 1.00 | 25.45 | 1DIK3258 |
| ATOM | 3167 | CG  | LEU | 418 | 14.649 | 37.875 | 12.474 | 1.00 | 28.70 | 1DIK3259 |
| ATOM | 3168 | CD1 | LEU | 418 | 14.842 | 37.187 | 11.139 | 1.00 | 27.85 | 1DIK3260 |
| ATOM | 3169 | CD2 | LEU | 418 | 13.525 | 38.908 | 12.354 | 1.00 | 23.85 | 1DIK3261 |
| ATOM | 3170 | N   | GLY | 419 | 14.118 | 36.234 | 17.154 | 1.00 | 27.13 | 1DIK3262 |
| ATOM | 3171 | CA  | GLY | 419 | 13.556 | 35.364 | 18.182 | 1.00 | 22.28 | 1DIK3263 |
| ATOM | 3172 | C   | GLY | 419 | 13.913 | 33.894 | 18.094 | 1.00 | 25.13 | 1DIK3264 |
| ATOM | 3173 | O   | GLY | 419 | 13.347 | 33.077 | 18.827 | 1.00 | 29.64 | 1DIK3265 |
| ATOM | 3174 | N   | ARG | 420 | 14.852 | 33.555 | 17.218 | 1.00 | 18.88 | 1DIK3266 |
| ATOM | 3175 | CA  | ARG | 420 | 15.252 | 32.173 | 17.004 | 1.00 | 21.64 | 1DIK3267 |
| ATOM | 3176 | C   | ARG | 420 | 16.483 | 31.695 | 17.768 | 1.00 | 23.83 | 1DIK3268 |
| ATOM | 3177 | O   | ARG | 420 | 17.306 | 32.495 | 18.193 | 1.00 | 26.72 | 1DIK3269 |
| ATOM | 3178 | CB  | ARG | 420 | 15.504 | 31.959 | 15.515 | 1.00 | 23.45 | 1DIK3270 |
| ATOM | 3179 | CG  | ARG | 420 | 14.413 | 32.532 | 14.623 | 1.00 | 27.05 | 1DIK3271 |
| ATOM | 3180 | CD  | ARG | 420 | 14.827 | 32.520 | 13.166 | 1.00 | 25.37 | 1DIK3272 |
| ATOM | 3181 | NE  | ARG | 420 | 16.019 | 33.333 | 12.915 | 1.00 | 30.86 | 1DIK3273 |
| ATOM | 3182 | CZ  | ARG | 420 | 16.435 | 33.730 | 11.708 | 1.00 | 28.82 | 1DIK3274 |
| ATOM | 3183 | NH1 | ARG | 420 | 15.775 | 33.407 | 10.599 | 1.00 | 25.15 | 1DIK3275 |
| ATOM | 3184 | NH2 | ARG | 420 | 17.528 | 34.463 | 11.608 | 1.00 | 28.95 | 1DIK3276 |
| ATOM | 3185 | N   | CYS | 421 | 16.590 | 30.377 | 17.927 | 1.00 | 24.78 | 1DIK3277 |
| ATOM | 3186 | CA  | CYS | 421 | 17.726 | 29.704 | 18.570 | 1.00 | 22.57 | 1DIK3278 |
| ATOM | 3187 | C   | CYS | 421 | 18.039 | 28.519 | 17.679 | 1.00 | 23.03 | 1DIK3279 |
| ATOM | 3188 | O   | CYS | 421 | 17.144 | 27.988 | 17.035 | 1.00 | 22.43 | 1DIK3280 |
| ATOM | 3189 | CB  | CYS | 421 | 17.366 | 29.144 | 19.944 | 1.00 | 22.26 | 1DIK3281 |
| ATOM | 3190 | SG  | CYS | 421 | 17.337 | 30.349 | 21.302 | 1.00 | 27.11 | 1DIK3282 |
| ATOM | 3191 | N   | THR | 422 | 19.294 | 28.098 | 17.623 | 1.00 | 26.80 | 1DIK3283 |
| ATOM | 3192 | CA  | THR | 422 | 19.624 | 26.935 | 16.816 | 1.00 | 26.97 | 1DIK3284 |
| ATOM | 3193 | C   | THR | 422 | 18.879 | 25.795 | 17.511 | 1.00 | 30.20 | 1DIK3285 |
| ATOM | 3194 | O   | THR | 422 | 18.636 | 25.857 | 18.731 | 1.00 | 30.05 | 1DIK3286 |
| ATOM | 3195 | CB  | THR | 422 | 21.146 | 26.649 | 16.799 | 1.00 | 25.67 | 1DIK3287 |
| ATOM | 3196 | OG1 | THR | 422 | 21.615 | 26.400 | 18.133 | 1.00 | 25.43 | 1DIK3288 |
| ATOM | 3197 | CG2 | THR | 422 | 21.895 | 27.827 | 16.200 | 1.00 | 23.71 | 1DIK3289 |
| ATOM | 3198 | N   | ARG | 423 | 18.505 | 24.767 | 16.752 | 1.00 | 30.48 | 1DIK3290 |
| ATOM | 3199 | CA  | ARG | 423 | 17.781 | 23.650 | 17.331 | 1.00 | 28.62 | 1DIK3291 |
| ATOM | 3200 | C   | ARG | 423 | 18.528 | 23.048 | 18.518 | 1.00 | 29.61 | 1DIK3292 |
| ATOM | 3201 | O   | ARG | 423 | 17.934 | 22.791 | 19.567 | 1.00 | 29.29 | 1DIK3293 |
| ATOM | 3202 | CB  | ARG | 423 | 17.536 | 22.573 | 16.281 | 1.00 | 27.71 | 1DIK3294 |
| ATOM | 3203 | CG  | ARG | 423 | 16.711 | 21.420 | 16.820 | 1.00 | 30.71 | 1DIK3295 |
| ATOM | 3204 | CD  | ARG | 423 | 16.689 | 20.273 | 15.857 | 1.00 | 31.47 | 1DIK3296 |
| ATOM | 3205 | NE  | ARG | 423 | 18.046 | 19.852 | 15.553 | 1.00 | 33.67 | 1DIK3297 |
| ATOM | 3206 | CZ  | ASP | 423 | 18.406 | 19.262 | 14.422 | 1.00 | 33.99 | 1DIK3298 |
| ATOM | 3207 | NH1 | ASP | 423 | 17.510 | 19.012 | 13.476 | 1.00 | 35.49 | 1DIK3299 |
| ATOM | 3208 | NH2 | ASP | 423 | 19.671 | 18.921 | 14.241 | 1.00 | 38.78 | 1DIK3300 |
| ATOM | 3209 | N   | ASP | 424 | 19.830 | 22.838 | 18.351 | 1.00 | 29.32 | 1DIK3301 |
| ATOM | 3210 | CA  | ASP | 424 | 20.654 | 22.238 | 19.393 | 1.00 | 32.19 | 1DIK3302 |
| ATOM | 3211 | C   | ASP | 424 | 20.729 | 22.998 | 20.704 | 1.00 | 30.97 | 1DIK3303 |
| ATOM | 3212 | O   | ASP | 424 | 20.614 | 22.391 | 21.772 | 1.00 | 35.15 | 1DIK3304 |
| ATOM | 3213 | CB  | ASP | 424 | 22.057 | 21.954 | 18.858 | 1.00 | 37.79 | 1DIK3305 |
| ATOM | 3214 | CG  | ASP | 424 | 22.087 | 20.758 | 17.900 | 1.00 | 49.74 | 1DIK3306 |
| ATOM | 3215 | OD1 | ASP | 424 | 21.108 | 20.531 | 17.136 | 1.00 | 52.55 | 1DIK3307 |
| ATOM | 3216 | OD2 | ASP | 424 | 23.101 | 20.034 | 17.911 | 1.00 | 52.75 | 1DIK3308 |
| ATOM | 3217 | N   | SER | 425 | 20.919 | 24.311 | 24.653 | 1.00 | 28.34 | 1DIK3309 |

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 3218 | CA  | SER | 425 | 20.976 | 25.071 | 21.893 | 1.00 | 28.79 | 1DIK3310 |
| ATOM | 3219 | C   | SER | 425 | 19.568 | 25.148 | 22.504 | 1.00 | 28.14 | 1DIK3311 |
| ATOM | 3220 | O   | SER | 425 | 19.422 | 25.177 | 23.731 | 1.00 | 27.74 | 1DIK3312 |
| ATOM | 3221 | CB  | SER | 425 | 21.584 | 26.470 | 21.674 | 1.00 | 27.42 | 1DIK3313 |
| ATOM | 3222 | OG  | SER | 425 | 20.849 | 27.235 | 20.742 | 1.00 | 31.04 | 1DIK3314 |
| ATOM | 3223 | N   | PHE | 426 | 18.538 | 25.170 | 21.651 | 1.00 | 26.40 | 1DIK3315 |
| ATOM | 3224 | CA  | PHE | 426 | 17.152 | 25.203 | 22.129 | 1.00 | 26.40 | 1DIK3316 |
| ATOM | 3225 | C   | PHE | 426 | 16.839 | 23.931 | 22.941 | 1.00 | 26.61 | 1DIK3317 |
| ATOM | 3226 | O   | PHE | 426 | 16.311 | 23.996 | 24.064 | 1.00 | 23.72 | 1DIK3318 |
| ATOM | 3227 | CB  | PHE | 426 | 16.149 | 25.327 | 20.961 | 1.00 | 24.80 | 1DIK3319 |
| ATOM | 3228 | CG  | PHE | 426 | 14.698 | 25.227 | 21.399 | 1.00 | 24.49 | 1DIK3320 |
| ATOM | 3229 | CD1 | PHE | 426 | 14.123 | 26.225 | 22.185 | 1.00 | 23.07 | 1DIK3321 |
| ATOM | 3230 | CD2 | PHE | 426 | 13.925 | 24.117 | 21.061 | 1.00 | 22.45 | 1DIK3322 |
| ATOM | 3231 | CE1 | PHE | 426 | 12.809 | 26.112 | 22.632 | 1.00 | 20.13 | 1DIK3323 |
| ATOM | 3232 | CE2 | PHE | 426 | 12.609 | 23.999 | 21.506 | 1.00 | 19.45 | 1DIK3324 |
| ATOM | 3233 | CZ  | PHE | 426 | 12.053 | 24.993 | 22.293 | 1.00 | 20.49 | 1DIK3325 |
| ATOM | 3234 | N   | VAL | 427 | 17.161 | 22.780 | 22.354 | 1.00 | 27.03 | 1DIK3326 |
| ATOM | 3235 | CA  | VAL | 427 | 16.948 | 21.491 | 22.996 | 1.00 | 27.17 | 1DIK3327 |
| ATOM | 3236 | C   | VAL | 427 | 17.788 | 21.444 | 24.267 | 1.00 | 29.37 | 1DIK3328 |
| ATOM | 3237 | O   | VAL | 427 | 17.327 | 21.011 | 25.323 | 1.00 | 32.09 | 1DIK3329 |
| ATOM | 3238 | CB  | VAL | 427 | 17.348 | 20.346 | 22.047 | 1.00 | 28.39 | 1DIK3330 |
| ATOM | 3239 | CG1 | VAL | 427 | 17.439 | 19.022 | 22.809 | 1.00 | 26.94 | 1DIK3331 |
| ATOM | 3240 | CG2 | VAL | 427 | 16.326 | 20.256 | 20.901 | 1.00 | 24.93 | 1DIK3332 |
| ATOM | 3241 | N   | ARG | 428 | 19.024 | 21.909 | 24.160 | 1.00 | 31.56 | 1DIK3333 |
| ATOM | 3242 | CA  | ARG | 428 | 19.931 | 21.947 | 25.292 | 1.00 | 33.59 | 1DIK3334 |
| ATOM | 3243 | C   | ARG | 428 | 19.331 | 22.797 | 26.426 | 1.00 | 32.27 | 1DIK3335 |
| ATOM | 3244 | O   | ARG | 428 | 19.489 | 22.472 | 27.598 | 1.00 | 31.56 | 1DIK3336 |
| ATOM | 3245 | CB  | ARG | 428 | 21.257 | 22.518 | 24.819 | 1.00 | 40.23 | 1DIK3337 |
| ATOM | 3246 | CG  | ARG | 428 | 22.404 | 22.306 | 25.750 | 1.00 | 55.44 | 1DIK3338 |
| ATOM | 3247 | CD  | ARG | 428 | 23.706 | 22.643 | 25.043 | 1.00 | 69.03 | 1DIK3339 |
| ATOM | 3248 | NE  | ARG | 428 | 24.726 | 23.025 | 26.013 | 1.00 | 83.02 | 1DIK3340 |
| ATOM | 3249 | CZ  | ARG | 428 | 25.632 | 23.981 | 25.819 | 1.00 | 88.04 | 1DIK3341 |
| ATOM | 3250 | NH1 | ARG | 428 | 25.659 | 24.656 | 24.674 | 1.00 | 89.88 | 1DIK3342 |
| ATOM | 3251 | NH2 | ARG | 428 | 26.516 | 24.260 | 26.777 | 1.00 | 89.48 | 1DIK3343 |
| ATOM | 3252 | N   | GLY | 429 | 18.634 | 23.875 | 26.068 | 1.00 | 31.73 | 1DIK3344 |
| ATOM | 3253 | CA  | GLY | 429 | 18.011 | 24.754 | 27.049 | 1.00 | 29.88 | 1DIK3345 |
| ATOM | 3254 | C   | GLY | 429 | 16.814 | 24.187 | 27.816 | 1.00 | 31.65 | 1DIK3346 |
| ATOM | 3255 | O   | GLY | 429 | 16.434 | 24.718 | 28.871 | 1.00 | 29.27 | 1DIK3347 |
| ATOM | 3256 | N   | LEU | 430 | 16.208 | 23.115 | 27.308 | 1.00 | 32.28 | 1DIK3348 |
| ATOM | 3257 | CA  | LEU | 430 | 15.057 | 22.495 | 27.977 | 1.00 | 31.40 | 1DIK3349 |
| ATOM | 3258 | C   | LEU | 430 | 15.546 | 21.456 | 29.009 | 1.00 | 30.50 | 1DIK3350 |
| ATOM | 3259 | O   | LEU | 430 | 15.093 | 20.307 | 29.033 | 1.00 | 30.10 | 1DIK3351 |
| ATOM | 3260 | CB  | LEU | 430 | 14.144 | 21.836 | 26.930 | 1.00 | 27.85 | 1DIK3352 |
| ATOM | 3261 | CG  | LEU | 430 | 13.635 | 22.755 | 25.819 | 1.00 | 27.51 | 1DIK3353 |
| ATOM | 3262 | CD1 | LEU | 430 | 12.980 | 21.956 | 24.702 | 1.00 | 21.48 | 1DIK3354 |
| ATOM | 3263 | CD2 | LEU | 430 | 12.672 | 23.751 | 26.420 | 1.00 | 21.75 | 1DIK3355 |
| ATOM | 3264 | N   | SER | 431 | 16.468 | 21.869 | 29.869 | 1.00 | 29.03 | 1DIK3356 |
| ATOM | 3265 | CA  | SER | 431 | 17.028 | 20.960 | 30.864 | 1.00 | 31.21 | 1DIK3357 |
| ATOM | 3266 | C   | SER | 431 | 15.991 | 20.465 | 31.871 | 1.00 | 28.76 | 1DIK3358 |
| ATOM | 3267 | O   | SER | 431 | 16.037 | 19.308 | 32.290 | 1.00 | 29.64 | 1DIK3359 |
| ATOM | 3268 | CB  | SER | 431 | 18.212 | 21.623 | 31.580 | 1.00 | 31.70 | 1DIK3360 |
| ATOM | 3269 | OG  | SER | 431 | 17.837 | 22.857 | 32.169 | 1.00 | 36.73 | 1DIK3361 |
| ATOM | 3270 | N   | PHE | 432 | 15.059 | 21.334 | 32.254 | 1.00 | 25.33 | 1DIK3362 |
| ATOM | 3271 | CA  | PHE | 432 | 14.016 | 20.969 | 33.207 | 1.00 | 26.36 | 1DIK3363 |
| ATOM | 3272 | C   | PHE | 432 | 13.170 | 19.796 | 32.681 | 1.00 | 30.38 | 1DIK3364 |
| ATOM | 3273 | O   | PHE | 432 | 12.904 | 18.822 | 33.404 | 1.00 | 29.32 | 1DIK3365 |
| ATOM | 3274 | CB  | PHE | 432 | 13.133 | 22.186 | 33.487 | 1.00 | 21.52 | 1DIK3366 |
| ATOM | 3275 | CG  | PHE | 432 | 11.908 | 21.885 | 34.315 | 1.00 | 24.46 | 1DIK3367 |
| ATOM | 3276 | CD1 | PHE | 432 | 12.022 | 21.567 | 35.670 | 1.00 | 22.91 | 1DIK3368 |
| ATOM | 3277 | CD2 | PHE | 432 | 10.636 | 21.941 | 33.739 | 1.00 | 19.38 | 1DIK3369 |
| ATOM | 3278 | CE1 | PHE | 432 | 10.883 | 21.311 | 36.441 | 1.00 | 24.30 | 1DIK3370 |
| ATOM | 3279 | CE2 | PHE | 432 | 9.489  | 21.688 | 34.495 | 1.00 | 22.66 | 1DIK3371 |
| ATOM | 3280 | CZ  | PHE | 432 | 9.606  | 21.372 | 35.846 | 1.00 | 26.15 | 1DIK3372 |
| ATOM | 3281 | N   | ALA | 433 | 12.752 | 19.896 | 31.421 | 1.00 | 27.75 | 1DIK3373 |
| ATOM | 3282 | CA  | ALA | 433 | 11.958 | 18.850 | 30.796 | 1.00 | 26.55 | 1DIK3374 |

FIG. 8-51

|      |      |     |     |     |        |        |        |      |       |          |
|------|------|-----|-----|-----|--------|--------|--------|------|-------|----------|
| ATOM | 3283 | C   | ALA | 433 | 12.789 | 17.577 | 30.597 | 1.00 | 25.17 | 1DIK3375 |
| ATOM | 3284 | O   | ALA | 433 | 12.350 | 16.492 | 30.974 | 1.00 | 28.47 | 1DIK3376 |
| ATOM | 3285 | CB  | ALA | 433 | 11.411 | 19.336 | 29.460 | 1.00 | 23.17 | 1DIK3377 |
| ATOM | 3286 | N   | ARG | 434 | 13.982 | 17.710 | 30.018 | 1.00 | 23.09 | 1DIK3378 |
| ATOM | 3287 | CA  | ARG | 434 | 14.849 | 16.557 | 29.754 | 1.00 | 24.40 | 1DIK3379 |
| ATOM | 3288 | C   | ARG | 434 | 15.156 | 15.725 | 30.992 | 1.00 | 24.98 | 1DIK3380 |
| ATOM | 3289 | O   | ARG | 434 | 15.416 | 14.525 | 30.889 | 1.00 | 25.10 | 1DIK3381 |
| ATOM | 3290 | CB  | ARG | 434 | 16.163 | 16.991 | 29.087 | 1.00 | 22.29 | 1DIK3382 |
| ATOM | 3291 | CG  | ARG | 434 | 16.013 | 17.379 | 27.610 | 1.00 | 27.82 | 1DIK3383 |
| ATOM | 3292 | CD  | ARG | 434 | 17.363 | 17.590 | 26.910 | 1.00 | 29.10 | 1DIK3384 |
| ATOM | 3293 | NE  | ARG | 434 | 18.090 | 18.741 | 27.446 | 1.00 | 36.82 | 1DIK3385 |
| ATOM | 3294 | CZ  | ARG | 434 | 19.087 | 18.664 | 28.332 | 1.00 | 39.13 | 1DIK3386 |
| ATOM | 3295 | NH1 | ARG | 434 | 19.487 | 17.480 | 28.784 | 1.00 | 39.16 | 1DIK3387 |
| ATOM | 3296 | NH2 | ARG | 434 | 19.688 | 19.770 | 28.766 | 1.00 | 30.93 | 1DIK3388 |
| ATOM | 3297 | N   | SER | 435 | 15.123 | 16.367 | 32.157 | 1.00 | 26.13 | 1DIK3389 |
| ATOM | 3298 | CA  | SER | 435 | 15.394 | 15.696 | 33.427 | 1.00 | 28.09 | 1DIK3390 |
| ATOM | 3299 | C   | SER | 435 | 14.126 | 15.122 | 34.088 | 1.00 | 26.80 | 1DIK3391 |
| ATOM | 3300 | O   | SER | 435 | 14.208 | 14.433 | 35.103 | 1.00 | 27.78 | 1DIK3392 |
| ATOM | 3301 | CB  | SER | 435 | 16.112 | 16.659 | 34.392 | 1.00 | 29.48 | 1DIK3393 |
| ATOM | 3302 | OG  | SER | 435 | 15.322 | 17.811 | 34.687 | 1.00 | 36.42 | 1DIK3394 |
| ATOM | 3303 | N   | GLY | 436 | 12.960 | 15.407 | 33.515 | 1.00 | 26.30 | 1DIK3395 |
| ATOM | 3304 | CA  | GLY | 436 | 11.719 | 14.894 | 34.068 | 1.00 | 24.08 | 1DIK3396 |
| ATOM | 3305 | C   | GLY | 436 | 11.003 | 15.827 | 35.025 | 1.00 | 25.00 | 1DIK3397 |
| ATOM | 3306 | O   | GLY | 436 | 10.114 | 15.383 | 35.763 | 1.00 | 25.04 | 1DIK3398 |
| ATOM | 3307 | N   | GLY | 437 | 11.376 | 17.107 | 35.015 | 1.00 | 24.66 | 1DIK3399 |
| ATOM | 3308 | CA  | GLY | 437 | 10.755 | 18.076 | 35.901 | 1.00 | 26.30 | 1DIK3400 |
| ATOM | 3309 | C   | GLY | 437 | 10.743 | 17.560 | 37.330 | 1.00 | 28.82 | 1DIK3401 |
| ATOM | 3310 | O   | GLY | 437 | 11.697 | 16.913 | 37.767 | 1.00 | 30.32 | 1DIK3402 |
| ATOM | 3311 | N   | ASP | 438 | 9.666  | 17.839 | 38.058 | 1.00 | 29.95 | 1DIK3403 |
| ATOM | 3312 | CA  | ASP | 438 | 9.516  | 17.374 | 39.438 | 1.00 | 31.82 | 1DIK3404 |
| ATOM | 3313 | C   | ASP | 438 | 8.453  | 16.273 | 39.477 | 1.00 | 32.65 | 1DIK3405 |
| ATOM | 3314 | O   | ASP | 438 | 7.674  | 16.197 | 40.434 | 1.00 | 29.97 | 1DIK3406 |
| ATOM | 3315 | CB  | ASP | 438 | 9.094  | 18.534 | 40.363 | 1.00 | 33.43 | 1DIK3407 |
| ATOM | 3316 | CG  | ASP | 438 | 10.174 | 19.610 | 40.499 | 1.00 | 37.98 | 1DIK3408 |
| ATOM | 3317 | OD1 | ASP | 438 | 11.372 | 19.271 | 40.545 | 1.00 | 43.62 | 1DIK3409 |
| ATOM | 3318 | OD2 | ASP | 438 | 9.834  | 20.806 | 40.563 | 1.00 | 40.73 | 1DIK3410 |
| ATOM | 3319 | N   | TRP | 439 | 8.423  | 15.420 | 38.446 | 1.00 | 32.12 | 1DIK3411 |
| ATOM | 3320 | CA  | TRP | 439 | 7.415  | 14.357 | 38.365 | 1.00 | 31.93 | 1DIK3412 |
| ATOM | 3321 | C   | TRP | 439 | 7.429  | 13.410 | 39.571 | 1.00 | 35.50 | 1DIK3413 |
| ATOM | 3322 | O   | TRP | 439 | 6.388  | 12.886 | 39.979 | 1.00 | 34.13 | 1DIK3414 |
| ATOM | 3323 | CB  | TRP | 439 | 7.545  | 13.573 | 37.045 | 1.00 | 23.82 | 1DIK3415 |
| ATOM | 3324 | CG  | TRP | 439 | 6.379  | 12.641 | 36.794 | 1.00 | 25.59 | 1DIK3416 |
| ATOM | 3325 | CD1 | TRP | 439 | 6.331  | 11.304 | 37.067 | 1.00 | 22.86 | 1DIK3417 |
| ATOM | 3326 | CD2 | TRP | 439 | 5.076  | 12.989 | 36.279 | 1.00 | 25.24 | 1DIK3418 |
| ATOM | 3327 | NE1 | TRP | 439 | 5.089  | 10.802 | 36.764 | 1.00 | 27.19 | 1DIK3419 |
| ATOM | 3328 | CE2 | TRP | 439 | 4.299  | 11.813 | 36.280 | 1.00 | 25.01 | 1DIK3420 |
| ATOM | 3329 | CE3 | TRP | 439 | 4.494  | 14.179 | 35.819 | 1.00 | 25.14 | 1DIK3421 |
| ATOM | 3330 | CZ2 | TRP | 439 | 2.967  | 11.790 | 35.842 | 1.00 | 26.41 | 1DIK3422 |
| ATOM | 3331 | CZ3 | TRP | 439 | 3.169  | 14.157 | 35.381 | 1.00 | 21.25 | 1DIK3423 |
| ATOM | 3332 | CH2 | TRP | 439 | 2.424  | 12.970 | 35.398 | 1.00 | 27.53 | 1DIK3424 |
| ATOM | 3333 | N   | ALA | 440 | 8.608  | 13.198 | 40.147 | 1.00 | 39.08 | 1DIK3425 |
| ATOM | 3334 | CA  | ALA | 440 | 8.740  | 12.325 | 41.304 | 1.00 | 40.38 | 1DIK3426 |
| ATOM | 3335 | C   | ALA | 440 | 7.783  | 12.771 | 42.429 | 1.00 | 42.18 | 1DIK3427 |
| ATOM | 3336 | O   | ALA | 440 | 7.072  | 11.948 | 43.026 | 1.00 | 44.41 | 1DIK3428 |
| ATOM | 3337 | CB  | ALA | 440 | 10.173 | 12.341 | 41.776 | 1.00 | 36.80 | 1DIK3429 |
| ATOM | 3338 | N   | GLU | 441 | 7.758  | 14.077 | 42.689 | 1.00 | 41.96 | 1DIK3430 |
| ATOM | 3339 | CA  | GLU | 441 | 6.903  | 14.687 | 43.713 | 1.00 | 42.69 | 1DIK3431 |
| ATOM | 3340 | C   | GLU | 441 | 5.397  | 14.402 | 43.529 | 1.00 | 42.04 | 1DIK3432 |
| ATOM | 3341 | O   | GLU | 441 | 4.575  | 14.766 | 44.373 | 1.00 | 42.51 | 1DIK3433 |
| ATOM | 3342 | CB  | GLU | 441 | 7.109  | 16.207 | 43.710 | 1.00 | 49.22 | 1DIK3434 |
| ATOM | 3343 | CG  | GLU | 441 | 8.554  | 16.671 | 43.787 | 1.00 | 56.93 | 1DIK3435 |
| ATOM | 3344 | CD  | GLU | 441 | 9.184  | 16.346 | 45.122 | 1.00 | 65.76 | 1DIK3436 |
| ATOM | 3345 | OE1 | GLU | 441 | 8.602  | 16.733 | 46.161 | 1.00 | 69.69 | 1DIK3437 |
| ATOM | 3346 | OE2 | GLU | 441 | 10.260 | 15.704 | 45.139 | 1.00 | 69.76 | 1DIK3438 |
| ATOM | 3347 | N   | CYS | 442 | 5.034  | 13.765 | 42.426 | 1.00 | 39.99 | 1DIK3439 |

FIG. 8-52

|        |      |     |     |     |         |        |        |      |       |          |
|--------|------|-----|-----|-----|---------|--------|--------|------|-------|----------|
| ATOM   | 3348 | CA  | CYS | 442 | 3.638   | 13.468 | 42.160 | 1.00 | 40.48 | 1DIK3440 |
| ATOM   | 3349 | C   | CYS | 442 | 3.068   | 12.411 | 43.073 | 1.00 | 43.32 | 1DIK3441 |
| ATOM   | 3350 | O   | CYS | 442 | 1.859   | 12.405 | 43.337 | 1.00 | 43.60 | 1DIK3442 |
| ATOM   | 3351 | CB  | CYS | 442 | 3.452   | 12.982 | 40.715 | 1.00 | 39.39 | 1DIK3443 |
| ATOM   | 3352 | SG  | CYS | 442 | 3.541   | 14.265 | 39.429 | 1.00 | 32.94 | 1DIK3444 |
| ATOM   | 3353 | N   | PHE | 443 | 3.930   | 11.517 | 43.546 | 1.00 | 45.06 | 1DIK3445 |
| ATOM   | 3354 | CA  | PHE | 443 | 3.479   | 10.403 | 44.372 | 1.00 | 50.79 | 1DIK3446 |
| ATOM   | 3355 | C   | PHE | 443 | 3.941   | 10.416 | 45.813 | 1.00 | 55.76 | 1DIK3447 |
| ATOM   | 3356 | O   | PHE | 443 | 3.268   | 9.863  | 46.684 | 1.00 | 57.52 | 1DIK3448 |
| ATOM   | 3357 | CB  | PHE | 443 | 3.882   | 9.111  | 43.681 | 1.00 | 45.54 | 1DIK3449 |
| ATOM   | 3358 | CG  | PHE | 443 | 3.724   | 9.182  | 42.205 | 1.00 | 45.83 | 1DIK3450 |
| ATOM   | 3359 | CD1 | PHE | 443 | 2.453   | 9.192  | 41.636 | 1.00 | 43.41 | 1DIK3451 |
| ATOM   | 3360 | CD2 | PHE | 443 | 4.840   | 9.294  | 41.379 | 1.00 | 46.74 | 1DIK3452 |
| ATOM   | 3361 | CE1 | PHE | 443 | 2.292   | 9.315  | 40.262 | 1.00 | 43.31 | 1DIK3453 |
| ATOM   | 3362 | CE2 | PHE | 443 | 4.694   | 9.417  | 39.999 | 1.00 | 45.78 | 1DIK3454 |
| ATOM   | 3363 | CZ  | PHE | 443 | 3.416   | 9.428  | 39.441 | 1.00 | 45.42 | 1DIK3455 |
| ATOM   | 3364 | N   | ALA | 444 | 5.089   | 11.039 | 46.060 | 1.00 | 62.20 | 1DIK3456 |
| ATOM   | 3365 | CA  | ALA | 444 | 5.621   | 11.144 | 47.412 | 1.00 | 66.60 | 1DIK3457 |
| ATOM   | 3366 | C   | ALA | 444 | 4.893   | 12.333 | 48.043 | 1.00 | 68.05 | 1DIK3458 |
| ATOM   | 3367 | O   | ALA | 444 | 3.938   | 12.089 | 48.817 | 1.00 | 68.94 | 1DIK3459 |
| ATOM   | 3368 | CB  | ALA | 444 | 7.151   | 11.380 | 47.381 | 1.00 | 66.83 | 1DIK3460 |
| ATOM   | 3369 | OXT | ALA | 444 | 5.274   | 13.489 | 47.747 | 1.00 | 69.24 | 1DIK3461 |
| TER    | 3370 |     | ALA | 444 |         |        |        |      |       | 1DIK3462 |
| HETATM | 3371 | O   | HOH | 1   | 5.314   | 11.951 | 16.327 | 1.00 | 10.28 | 1DIK3463 |
| HETATM | 3372 | O   | HOH | 2   | -6.660  | 26.826 | 16.721 | 1.00 | 14.37 | 1DIK3464 |
| HETATM | 3373 | O   | HOH | 3   | 0.327   | 31.364 | 16.394 | 1.00 | 14.78 | 1DIK3465 |
| HETATM | 3374 | O   | HOH | 4   | -11.448 | 9.894  | 26.651 | 1.00 | 15.14 | 1DIK3466 |
| HETATM | 3375 | O   | HOH | 5   | -1.808  | 14.907 | 36.587 | 1.00 | 15.18 | 1DIK3467 |
| HETATM | 3376 | O   | HOH | 6   | -16.607 | 13.889 | 26.028 | 1.00 | 15.50 | 1DIK3468 |
| HETATM | 3377 | O   | HOH | 7   | 8.014   | 7.031  | 26.624 | 1.00 | 15.90 | 1DIK3469 |
| HETATM | 3378 | O   | HOH | 8   | 2.890   | 16.506 | 29.187 | 1.00 | 16.33 | 1DIK3470 |
| HETATM | 3379 | O   | HOH | 9   | -3.509  | 12.674 | 9.344  | 1.00 | 16.84 | 1DIK3471 |
| HETATM | 3380 | O   | HOH | 10  | 12.661  | 12.918 | 24.069 | 1.00 | 17.03 | 1DIK3472 |
| HETATM | 3381 | O   | HOH | 11  | 0.759   | 15.125 | 16.187 | 1.00 | 18.48 | 1DIK3473 |
| HETATM | 3382 | O   | HOH | 12  | -4.619  | 39.381 | 32.613 | 1.00 | 18.74 | 1DIK3474 |
| HETATM | 3383 | O   | HOH | 13  | -9.462  | 31.056 | 14.118 | 1.00 | 18.80 | 1DIK3475 |
| HETATM | 3384 | O   | HOH | 14  | -5.677  | 35.681 | 21.397 | 1.00 | 19.53 | 1DIK3476 |
| HETATM | 3385 | O   | HOH | 15  | -11.372 | 5.811  | 26.977 | 1.00 | 20.29 | 1DIK3477 |
| HETATM | 3386 | O   | HOH | 16  | 1.644   | 9.234  | 20.239 | 1.00 | 20.38 | 1DIK3478 |
| HETATM | 3387 | O   | HOH | 17  | 7.980   | 5.282  | 24.219 | 1.00 | 20.45 | 1DIK3479 |
| HETATM | 3388 | O   | HOH | 18  | -2.840  | 6.618  | 26.553 | 1.00 | 21.48 | 1DIK3480 |
| HETATM | 3389 | O   | HOH | 19  | 10.194  | 6.545  | 20.888 | 1.00 | 21.50 | 1DIK3481 |
| HETATM | 3390 | O   | HOH | 20  | -10.932 | 8.587  | 24.215 | 1.00 | 22.02 | 1DIK3482 |
| HETATM | 3391 | O   | HOH | 21  | -3.698  | 27.479 | 12.828 | 1.00 | 22.24 | 1DIK3483 |
| HETATM | 3392 | O   | HOH | 22  | -9.209  | 6.732  | 23.045 | 1.00 | 22.35 | 1DIK3484 |
| HETATM | 3393 | O   | HOH | 23  | -11.843 | 33.526 | 16.995 | 1.00 | 22.95 | 1DIK3485 |
| HETATM | 3394 | O   | HOH | 24  | -10.730 | 33.322 | 13.268 | 1.00 | 23.32 | 1DIK3486 |
| HETATM | 3395 | O   | HOH | 25  | -5.232  | 6.280  | 25.125 | 1.00 | 23.99 | 1DIK3487 |
| HETATM | 3396 | O   | HOH | 26  | -2.692  | 31.651 | 13.662 | 1.00 | 24.43 | 1DIK3488 |
| HETATM | 3397 | O   | HOH | 27  | 9.007   | 7.301  | 10.872 | 1.00 | 24.65 | 1DIK3489 |
| HETATM | 3398 | O   | HOH | 28  | 4.550   | 15.458 | 32.235 | 1.00 | 24.79 | 1DIK3490 |
| HETATM | 3399 | O   | HOH | 29  | 0.579   | 35.238 | 22.968 | 1.00 | 24.95 | 1DIK3491 |
| HETATM | 3400 | O   | HOH | 30  | 0.056   | 10.426 | 25.818 | 1.00 | 25.40 | 1DIK3492 |
| HETATM | 3401 | O   | HOH | 31  | 2.362   | 9.432  | 24.562 | 1.00 | 26.19 | 1DIK3493 |
| HETATM | 3402 | O   | HOH | 32  | 8.504   | 5.960  | 17.071 | 1.00 | 26.33 | 1DIK3494 |
| HETATM | 3403 | O   | HOH | 33  | -3.535  | 16.451 | 2.757  | 1.00 | 26.46 | 1DIK3495 |
| HETATM | 3404 | O   | HOH | 34  | 1.506   | 9.018  | 33.598 | 1.00 | 26.96 | 1DIK3496 |
| HETATM | 3405 | O   | HOH | 35  | -18.820 | 19.116 | 20.350 | 1.00 | 27.18 | 1DIK3497 |
| HETATM | 3406 | O   | HOH | 36  | 8.399   | 9.350  | 9.458  | 1.00 | 27.24 | 1DIK3498 |
| HETATM | 3407 | O   | HOH | 37  | -9.061  | 36.957 | 6.577  | 1.00 | 27.38 | 1DIK3500 |
| HETATM | 3408 | O   | HOH | 38  | -12.921 | 16.340 | 9.063  | 1.00 | 27.46 | 1DIK3501 |
| HETATM | 3409 | O   | HOH | 39  | -12.574 | 24.639 | 28.242 | 1.00 | 27.73 | 1DIK3502 |
| HETATM | 3410 | O   | HOH | 40  | -12.507 | 26.784 | 33.545 | 1.00 | 27.75 | 1DIK3503 |
| HETATM | 3411 | O   | HOH | 41  | -7.187  | 31.641 | 12.393 | 1.00 | 27.85 | 1DIK3504 |
| HETATM | 3412 | O   | HOH | 42  | -10.571 | 32.202 | 19.033 | 1.00 | 28.02 |          |

|        |      |   |     |     |         |        |        |      |       |          |
|--------|------|---|-----|-----|---------|--------|--------|------|-------|----------|
| HETATM | 3413 | 0 | HOH | 43  | 8.426   | 35.536 | 30.142 | 1.00 | 28.34 | 1DIK3505 |
| HETATM | 3414 | 0 | HOH | 44  | -6.691  | 36.766 | 30.786 | 1.00 | 28.87 | 1DIK3506 |
| HETATM | 3415 | 0 | HOH | 45  | 12.389  | 22.580 | 30.279 | 1.00 | 29.03 | 1DIK3507 |
| HETATM | 3416 | 0 | HOH | 46  | -16.222 | 15.844 | 27.511 | 1.00 | 29.03 | 1DIK3508 |
| HETATM | 3417 | 0 | HOH | 47  | -10.420 | 13.136 | 6.619  | 1.00 | 29.13 | 1DIK3509 |
| HETATM | 3418 | 0 | HOH | 48  | 6.987   | 21.974 | 38.216 | 1.00 | 29.26 | 1DIK3510 |
| HETATM | 3419 | 0 | HOH | 49  | -17.438 | 17.382 | 24.990 | 1.00 | 29.33 | 1DIK3511 |
| HETATM | 3420 | 0 | HOH | 50  | -22.489 | 30.175 | 17.758 | 1.00 | 29.51 | 1DIK3512 |
| HETATM | 3421 | 0 | HOH | 51  | -2.152  | 40.434 | 32.506 | 1.00 | 29.67 | 1DIK3513 |
| HETATM | 3422 | 0 | HOH | 52  | -10.794 | 11.992 | 11.258 | 1.00 | 29.84 | 1DIK3514 |
| HETATM | 3423 | 0 | HOH | 53  | -5.062  | 39.959 | 28.886 | 1.00 | 29.89 | 1DIK3515 |
| HETATM | 3424 | 0 | HOH | 54  | -19.008 | 30.051 | 23.934 | 1.00 | 29.97 | 1DIK3516 |
| HETATM | 3425 | 0 | HOH | 55  | 14.324  | 12.475 | 22.179 | 1.00 | 29.97 | 1DIK3517 |
| HETATM | 3426 | 0 | HOH | 56  | -15.744 | 47.285 | 28.530 | 1.00 | 29.97 | 1DIK3518 |
| HETATM | 3427 | 0 | HOH | 57  | -2.017  | 21.298 | 33.876 | 1.00 | 30.51 | 1DIK3519 |
| HETATM | 3428 | 0 | HOH | 58  | -10.164 | 23.699 | 27.468 | 1.00 | 30.66 | 1DIK3520 |
| HETATM | 3429 | 0 | HOH | 59  | 21.068  | 30.466 | 19.064 | 1.00 | 30.86 | 1DIK3521 |
| HETATM | 3430 | 0 | HOH | 60  | 15.633  | 26.247 | 25.288 | 1.00 | 31.46 | 1DIK3522 |
| HETATM | 3431 | 0 | HOH | 61  | 2.539   | 13.006 | 3.675  | 1.00 | 31.51 | 1DIK3523 |
| HETATM | 3432 | 0 | HOH | 62  | 0.718   | 11.503 | 8.049  | 1.00 | 31.69 | 1DIK3524 |
| HETATM | 3433 | 0 | HOH | 63  | 6.296   | 32.820 | 36.174 | 1.00 | 31.69 | 1DIK3525 |
| HETATM | 3434 | 0 | HOH | 64  | -6.588  | 42.450 | 32.884 | 1.00 | 31.91 | 1DIK3526 |
| HETATM | 3435 | 0 | HOH | 65  | 2.321   | 35.791 | 25.121 | 1.00 | 32.04 | 1DIK3527 |
| HETATM | 3436 | 0 | HOH | 66  | -11.516 | 36.087 | 6.335  | 1.00 | 32.59 | 1DIK3528 |
| HETATM | 3437 | 0 | HOH | 67  | -25.724 | 25.284 | 29.618 | 1.00 | 32.59 | 1DIK3529 |
| HETATM | 3438 | 0 | HOH | 68  | -18.133 | 26.391 | 31.970 | 1.00 | 32.62 | 1DIK3530 |
| HETATM | 3439 | 0 | HOH | 69  | -14.947 | 45.064 | 46.354 | 1.00 | 33.42 | 1DIK3531 |
| HETATM | 3440 | 0 | HOH | 70  | 21.082  | 26.576 | 25.533 | 1.00 | 33.44 | 1DIK3532 |
| HETATM | 3441 | 0 | HOH | 71  | 11.263  | 14.005 | 39.063 | 1.00 | 33.76 | 1DIK3533 |
| HETATM | 3442 | 0 | HOH | 72  | 6.695   | 36.561 | 26.464 | 1.00 | 33.92 | 1DIK3534 |
| HETATM | 3443 | 0 | HOH | 73  | -5.225  | 27.878 | -1.684 | 1.00 | 34.01 | 1DIK3535 |
| HETATM | 3444 | 0 | HOH | 74  | -0.802  | 9.860  | -0.093 | 1.00 | 34.16 | 1DIK3536 |
| HETATM | 3445 | 0 | HOH | 75  | -12.291 | 22.260 | 29.152 | 1.00 | 34.19 | 1DIK3537 |
| HETATM | 3446 | 0 | HOH | 76  | 9.096   | 28.265 | 3.852  | 1.00 | 35.19 | 1DIK3538 |
| HETATM | 3447 | 0 | HOH | 77  | 14.838  | 41.703 | 18.071 | 1.00 | 35.41 | 1DIK3539 |
| HETATM | 3448 | 0 | HOH | 78  | 7.786   | 14.132 | 5.764  | 1.00 | 35.54 | 1DIK3540 |
| HETATM | 3449 | 0 | HOH | 79  | 14.772  | 24.028 | 31.196 | 1.00 | 35.79 | 1DIK3541 |
| HETATM | 3450 | 0 | HOH | 80  | -6.978  | 43.656 | 22.677 | 1.00 | 35.90 | 1DIK3542 |
| HETATM | 3451 | 0 | HOH | 81  | -10.032 | 8.600  | 15.243 | 1.00 | 36.00 | 1DIK3543 |
| HETATM | 3452 | 0 | HOH | 82  | 24.248  | 25.836 | 18.908 | 1.00 | 36.04 | 1DIK3544 |
| HETATM | 3453 | 0 | HOH | 83  | -9.437  | 28.721 | 1.634  | 1.00 | 36.20 | 1DIK3545 |
| HETATM | 3454 | 0 | HOH | 84  | -2.779  | 26.774 | 21.988 | 1.00 | 36.25 | 1DIK3546 |
| HETATM | 3455 | 0 | HOH | 85  | -20.467 | 37.474 | 17.552 | 1.00 | 36.27 | 1DIK3547 |
| HETATM | 3456 | 0 | HOH | 86  | 8.166   | 29.232 | 31.117 | 1.00 | 36.46 | 1DIK3548 |
| HETATM | 3457 | 0 | HOH | 87  | -26.538 | 28.576 | 41.161 | 1.00 | 36.47 | 1DIK3549 |
| HETATM | 3458 | 0 | HOH | 88  | -2.580  | 22.992 | 47.692 | 1.00 | 36.48 | 1DIK3550 |
| HETATM | 3459 | 0 | HOH | 89  | 12.366  | 14.284 | 9.003  | 1.00 | 36.58 | 1DIK3551 |
| HETATM | 3460 | 0 | HOH | 90  | -21.790 | 30.576 | 46.190 | 1.00 | 36.67 | 1DIK3552 |
| HETATM | 3461 | 0 | HOH | 91  | -15.282 | 25.935 | 33.446 | 1.00 | 36.75 | 1DIK3553 |
| HETATM | 3462 | 0 | HOH | 92  | 14.144  | 14.560 | 25.959 | 1.00 | 36.89 | 1DIK3554 |
| HETATM | 3463 | 0 | HOH | 93  | -1.689  | 11.245 | 32.455 | 1.00 | 36.99 | 1DIK3555 |
| HETATM | 3464 | 0 | HOH | 94  | -15.117 | 10.158 | 15.158 | 1.00 | 37.08 | 1DIK3556 |
| HETATM | 3465 | 0 | HOH | 95  | -14.135 | 46.511 | 18.743 | 1.00 | 37.17 | 1DIK3557 |
| HETATM | 3466 | 0 | HOH | 96  | -4.814  | 10.202 | 6.231  | 1.00 | 37.24 | 1DIK3558 |
| HETATM | 3467 | 0 | HOH | 97  | 7.946   | 31.148 | 35.040 | 1.00 | 37.53 | 1DIK3559 |
| HETATM | 3468 | 0 | HOH | 98  | -6.586  | 41.003 | 26.383 | 1.00 | 37.57 | 1DIK3560 |
| HETATM | 3469 | 0 | HOH | 99  | -19.902 | 18.883 | 33.687 | 1.00 | 37.74 | 1DIK3561 |
| HETATM | 3470 | 0 | HOH | 100 | -18.028 | 40.102 | 50.829 | 1.00 | 37.89 | 1DIK3562 |
| HETATM | 3471 | 0 | HOH | 101 | -13.315 | 28.183 | 35.513 | 1.00 | 38.10 | 1DIK3563 |
| HETATM | 3472 | 0 | HOH | 102 | -28.008 | 45.248 | 30.179 | 1.00 | 38.86 | 1DIK3564 |
| HETATM | 3473 | 0 | HOH | 103 | 0.486   | 39.943 | 46.308 | 1.00 | 39.11 | 1DIK3565 |
| HETATM | 3474 | 0 | HOH | 104 | -2.576  | 4.959  | 28.921 | 1.00 | 39.13 | 1DIK3566 |
| HETATM | 3475 | 0 | HOH | 105 | -25.042 | 47.163 | 37.757 | 1.00 | 39.65 | 1DIK3567 |
| HETATM | 3476 | 0 | HOH | 106 | -13.645 | 35.978 | 48.302 | 1.00 | 40.20 | 1DIK3568 |
| HETATM | 3477 | 0 | HOH | 107 | 14.699  | 38.630 | 20.218 | 1.00 | 40.52 | 1DIK3569 |

FIG. 8-54

In re Application of: Dirk KOSTREWA, *et al.*  
 Parent Serial No.: 10/062,848  
 For: MODIFIED PHYTASES

|        |      |      |      |      |         |        |        |      |       |          |   |    |          |
|--------|------|------|------|------|---------|--------|--------|------|-------|----------|---|----|----------|
| HETATM | 3478 | O    | HOH  | 108  | -8.278  | 44.086 | 42.473 | 1.00 | 41.00 | 1DIK3570 |   |    |          |
| HETATM | 3479 | O    | HOH  | 109  | -5.494  | 11.036 | 32.617 | 1.00 | 42.26 | 1DIK3571 |   |    |          |
| HETATM | 3480 | O    | HOH  | 110  | 9.842   | 15.499 | 12.296 | 1.00 | 43.26 | 1DIK3572 |   |    |          |
| HETATM | 3481 | O    | HOH  | 111  | -16.929 | 18.595 | 14.159 | 1.00 | 43.73 | 1DIK3573 |   |    |          |
| HETATM | 3482 | O    | HOH  | 112  | -2.958  | 42.099 | 16.177 | 1.00 | 43.99 | 1DIK3574 |   |    |          |
| HETATM | 3483 | O    | HOH  | 113  | -20.129 | 25.973 | 11.583 | 1.00 | 44.43 | 1DIK3575 |   |    |          |
| HETATM | 3484 | O    | HOH  | 114  | 8.119   | 26.656 | -2.650 | 1.00 | 44.66 | 1DIK3576 |   |    |          |
| HETATM | 3485 | O    | HOH  | 115  | 17.556  | 35.041 | 8.367  | 1.00 | 45.27 | 1DIK3577 |   |    |          |
| HETATM | 3486 | S    | SO4  | 201  | 18.476  | 17.347 | 10.473 | 1.00 | 98.34 | 1DIK3578 |   |    |          |
| HETATM | 3487 | O1   | SO4  | 201  | 17.123  | 18.013 | 10.311 | 1.00 | 96.57 | 1DIK3579 |   |    |          |
| HETATM | 3488 | O2   | SO4  | 201  | 18.756  | 16.524 | 9.233  | 1.00 | 97.48 | 1DIK3580 |   |    |          |
| HETATM | 3489 | O3   | SO4  | 201  | 18.472  | 16.383 | 11.631 | 1.00 | 95.71 | 1DIK3581 |   |    |          |
| HETATM | 3490 | O4   | SO4  | 201  | 19.535  | 18.422 | 10.640 | 1.00 | 95.40 | 1DIK3582 |   |    |          |
| CONECT | 3486 | 3490 | 3489 | 3488 | 3487    |        |        |      |       | 1DIK3583 |   |    |          |
| CONECT | 3487 | 3486 |      |      |         |        |        |      |       | 1DIK3584 |   |    |          |
| CONECT | 3488 | 3486 |      |      |         |        |        |      |       | 1DIK3585 |   |    |          |
| CONECT | 3489 | 3486 |      |      |         |        |        |      |       | 1DIK3586 |   |    |          |
| CONECT | 3490 | 3486 |      |      |         |        |        |      |       | 1DIK3587 |   |    |          |
| MASTER | 46   |      | 0    | 1    | 0       | 0      | 0      | 0    | 3488  | 1        | 5 | 34 | 1DIK3588 |
| END    |      |      |      |      |         |        |        |      |       |          |   |    | 1DIK3589 |

FIG. 8-55

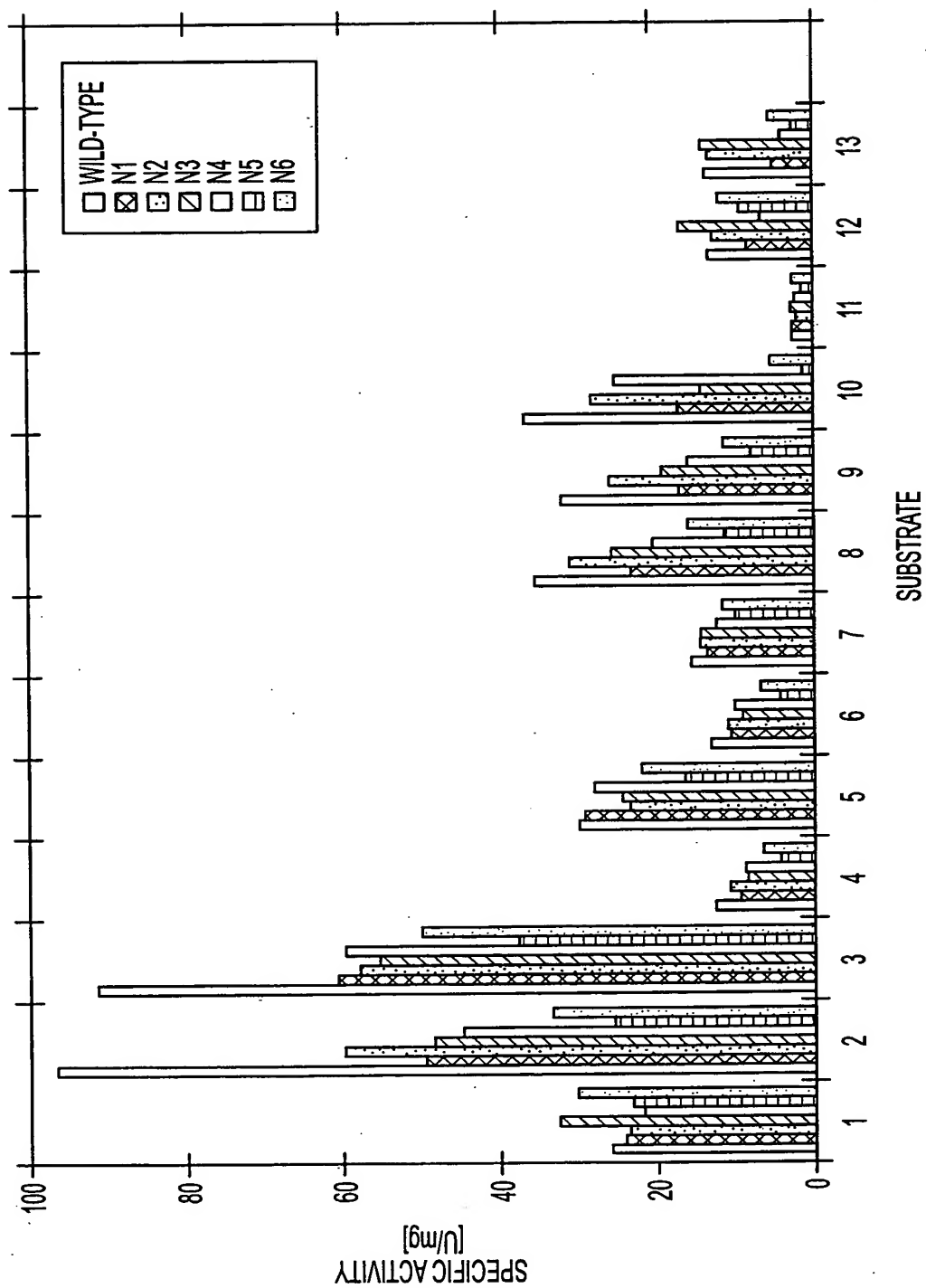


FIG. 9

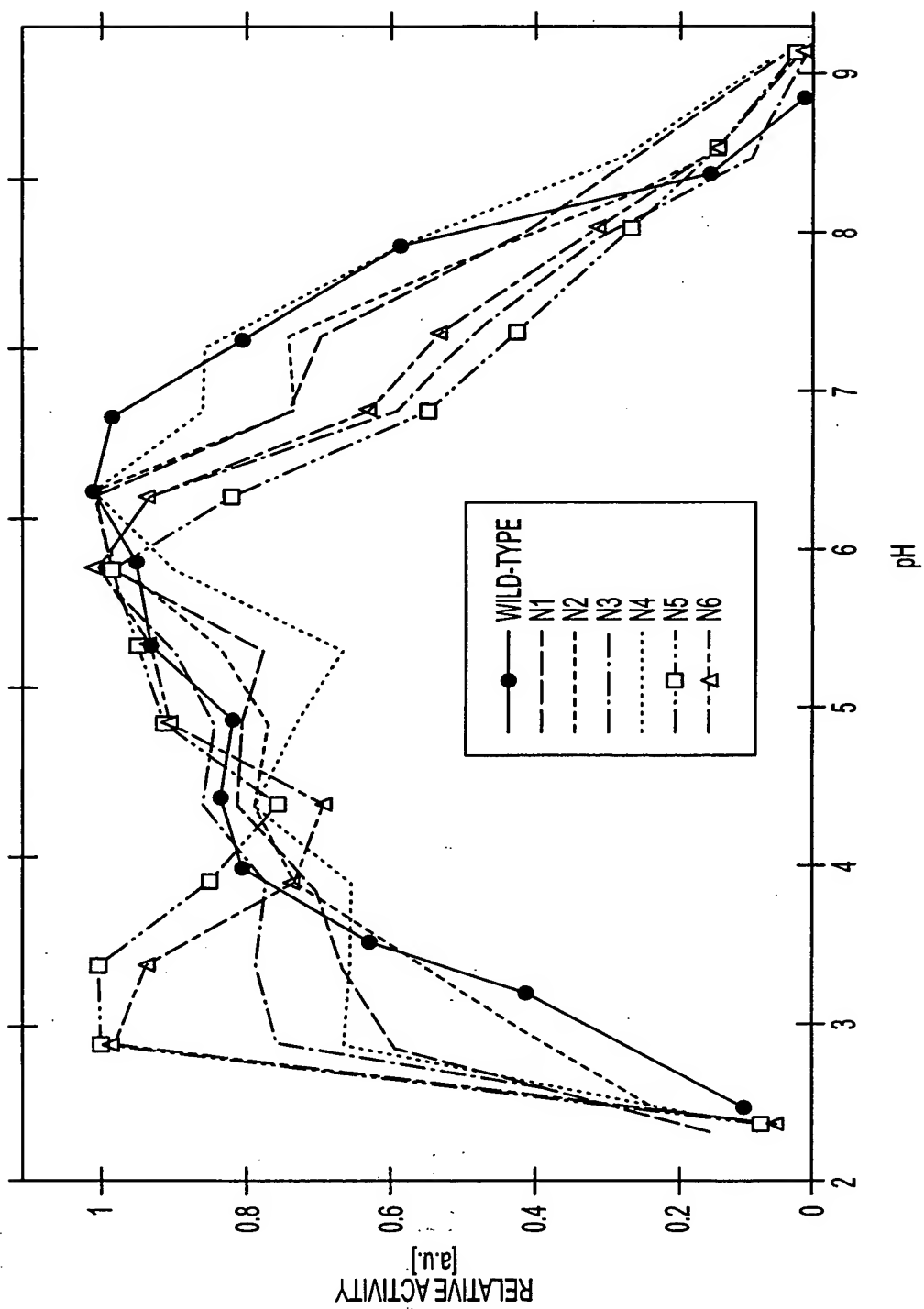
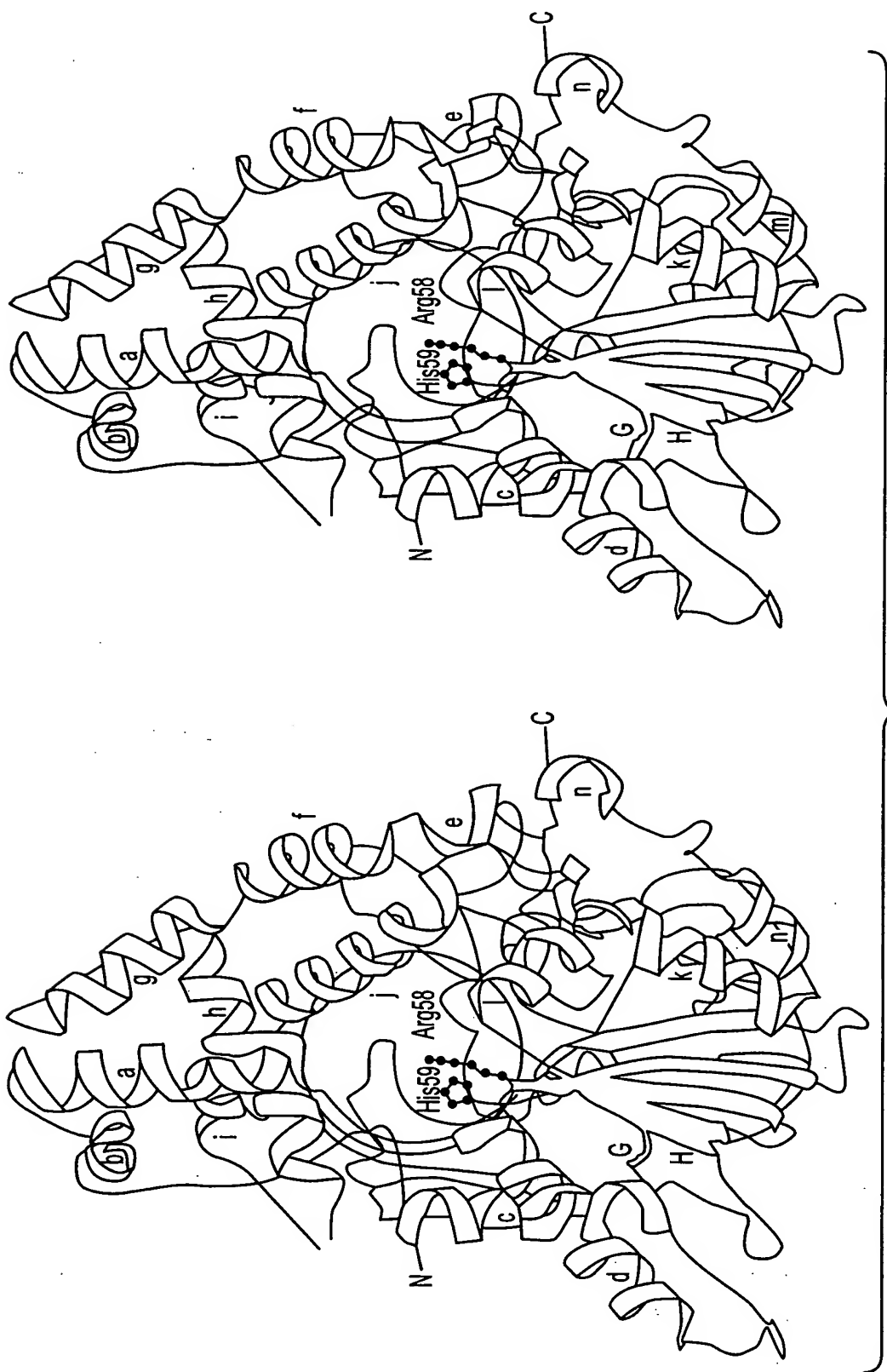


FIG. 10





**FIG. 11a**



FIG. 11b

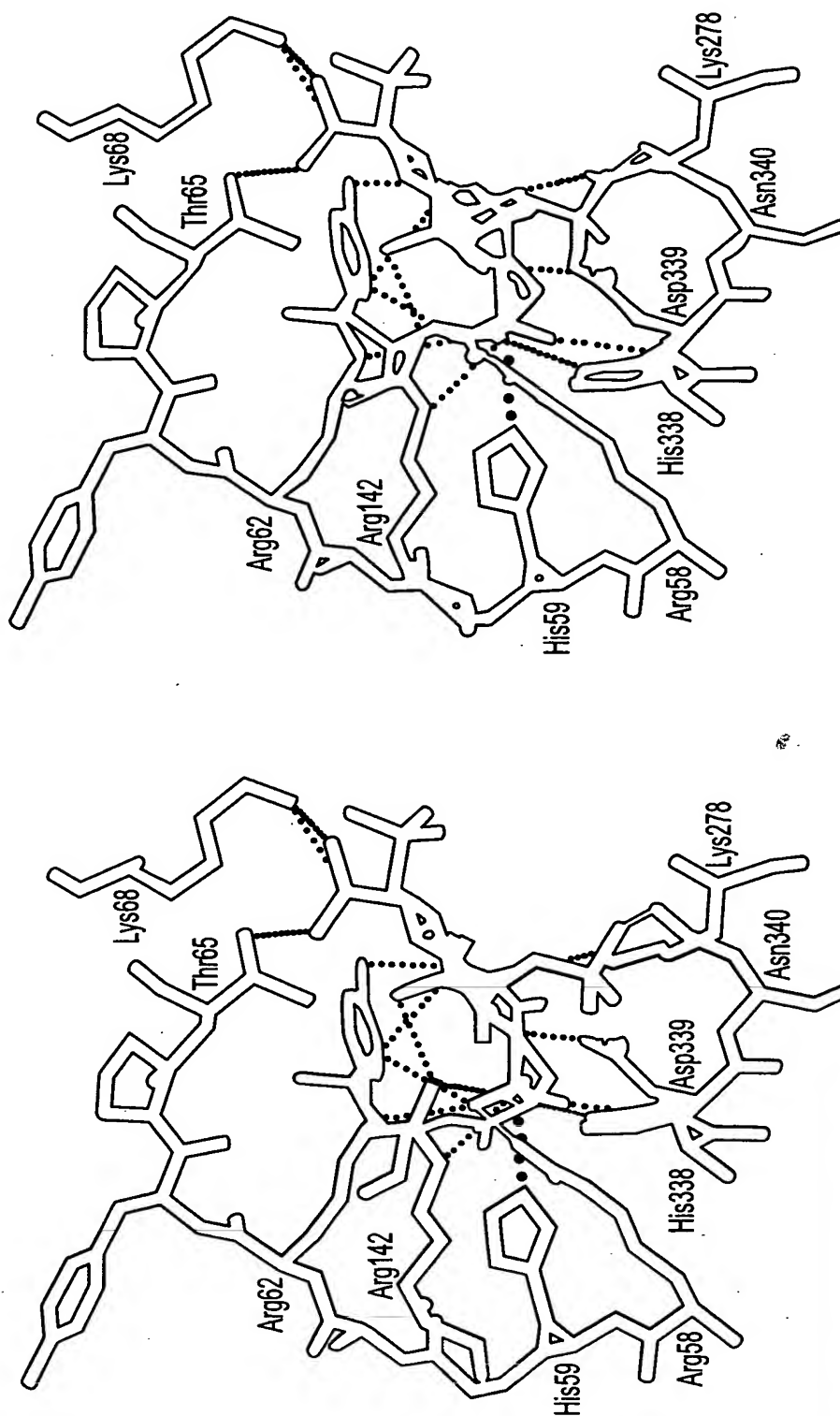
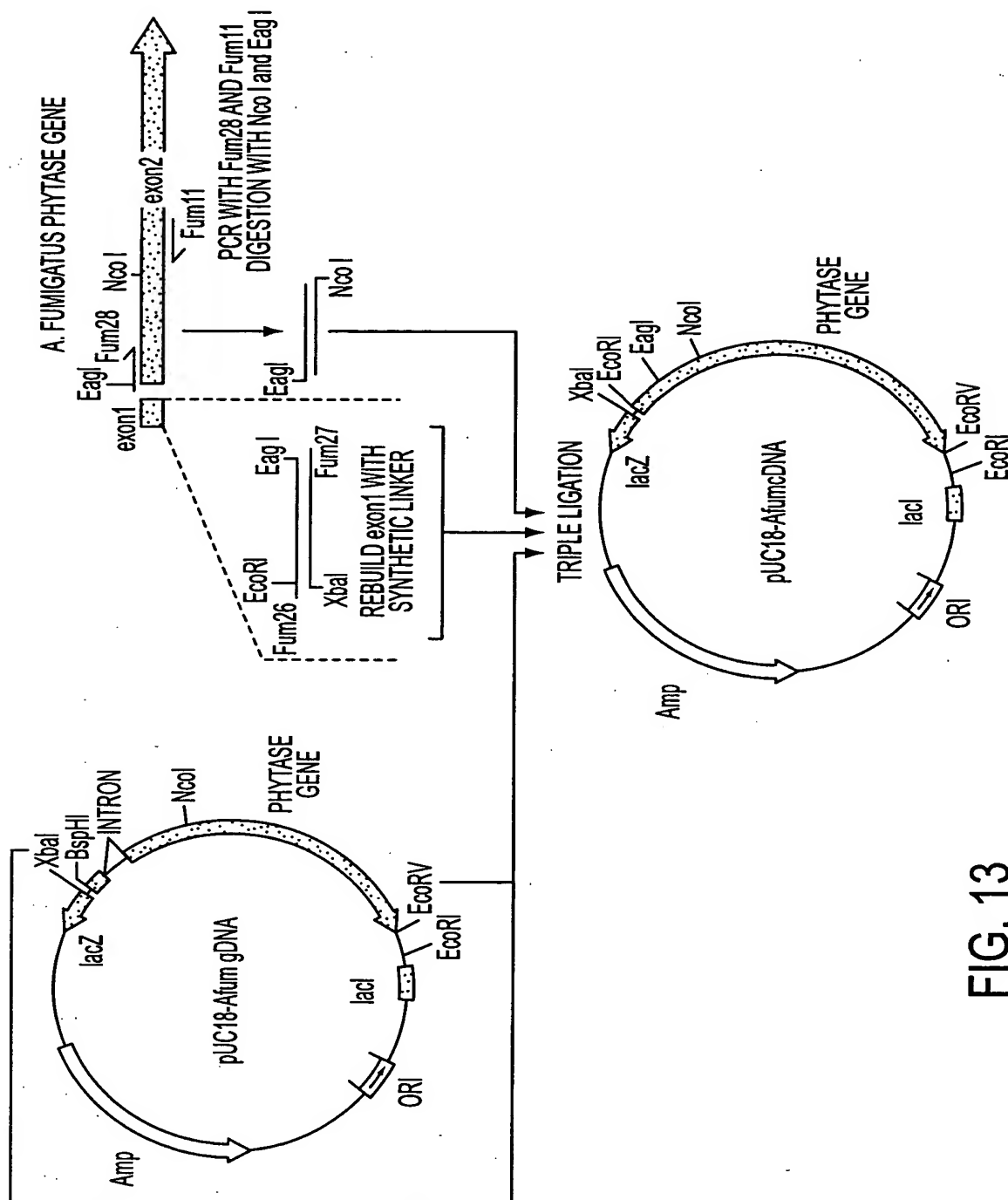


FIG. 12



**FIG. 13**

**PRIMER SET A**

|                |    |     |     |     |     |                 |     |     |     |     |    |
|----------------|----|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|----|
| PRIMER Q27L s  | 5' | CAT | CTA | TGG | GGC | <u>CTG</u>      | TAC | TCG | CCA | TTC | 3' |
| PRIMER Q27L as | 3' | GTA | GAT | ACC | CCG | <u>GAC</u>      | ATG | AGC | GGT | AAG | 5' |
|                |    | H   | L   | W   | G   | L <sub>27</sub> | Y   | S   | P   | F   |    |

**PRIMER SET B**

|                 |    |     |     |     |     |                  |     |     |     |     |    |
|-----------------|----|-----|-----|-----|-----|------------------|-----|-----|-----|-----|----|
| PRIMER Q274L s  | 5' | TAC | AAC | TAC | CTT | <u>CTG</u>       | TCC | TTG | GGC | AAG | 3' |
| PRIMER Q274L as | 3' | ATG | TTG | ATG | GAA | <u>GAC</u>       | AGG | AAC | CCG | TTC | 5' |
|                 |    | Y   | N   | Y   | L   | L <sub>274</sub> | S   | L   | G   | K   |    |

**PRIMER SET C**

|                 |    |     |     |     |     |                  |     |     |     |     |    |
|-----------------|----|-----|-----|-----|-----|------------------|-----|-----|-----|-----|----|
| PRIMER G277D s  | 5' | CTT | CAG | TCC | TTG | <u>GAC</u>       | AAG | TAC | TAC | GGC | 3' |
| PRIMER G277D as | 3' | GAA | GTC | AGG | AAC | <u>CTG</u>       | TTC | ATG | ATG | CCG | 5' |
|                 |    | L   | Q   | S   | L   | D <sub>277</sub> | K   | Y   | Y   | G   |    |

**PRIMER SET D**

|                  |    |     |                  |     |     |                  |     |     |     |     |    |
|------------------|----|-----|------------------|-----|-----|------------------|-----|-----|-----|-----|----|
| PRIMER G277D* s  | 5' | CTT | CTG              | TCC | TTG | <u>GAC</u>       | AAG | TAC | TAC | GGC | 3' |
| PRIMER G277D* as | 3' | GAA | GAC              | AGG | AAC | <u>CTG</u>       | TTC | ATG | ATG | CCG | 5' |
|                  |    | L   | L <sub>274</sub> | S   | L   | D <sub>277</sub> | K   | Y   | Y   | G   |    |

**PRIMER SET E**

|                 |    |     |     |     |     |                  |     |     |     |     |    |
|-----------------|----|-----|-----|-----|-----|------------------|-----|-----|-----|-----|----|
| PRIMER N340S s  | 5' | TTT | TCA | CAC | GAC | <u>AGC</u>       | AGC | ATG | GTT | TCC | 3' |
| PRIMER N340S as | 3' | AAA | AGT | GTG | CTG | <u>TCG</u>       | TCG | TAC | CAA | AGG | 5' |
|                 |    | F   | S   | H   | D   | S <sub>340</sub> | S   | M   | V   | I   |    |

**FIG. 14a-1**

**PRIMER SET F**

PRIMER G277K s 5' C CTT CAG TCC TTG AAG AAG TAC TAC GGC TAC 3'  
 PRIMER G277K as 3' G GAA GTC AGG AAC TTC TTC ATG ATG CCG ATG 5'  
 L Q S L K<sub>277</sub> K Y Y G Y

**PRIMER SET G**

PRIMER A205E s 5' GGA GAT GAG GTT GAG GCC AAT TTC ACT G 3'  
 PRIMER A205E as 3' CCT CTA CTC CAA CTC CGG TTA AAG TGA C 5'  
 G D E V E<sub>205</sub> A N F T

**PRIMER SET H**

PRIMER Y282H s 5' AAG TAC TAC GGC CAC GGC GCA GGC AAC 3'  
 PRIMER Y282H as 3' TTC ATG ATG CCG GTG CCG CGT CCG TTG 5'  
 K Y Y G H<sub>282</sub> G A G N

**PRIMER SET I**

PRIMER AvrII s 5' GAT ACG GTA GAC CTA GGG TAC CAG TGC 3'  
 PRIMER AvrII as 3' CTA TGC CAT CTG GAT CCC ATG GTC ACG 5'  
 D T V D L G Y Q C

**PRIMER SET J**

PRIMER S66D s 5' CGG TAC CCA ACC GAT TCG AAG AGC AAA AAG 3'  
 PRIMER S66D as 3' GCC ATG GGT TGG CTA AGC TTC TCG TTT TTC 5'  
 R Y P T D<sub>66</sub> S K S K K

**PRIMER SET K**

PRIMER S140Y/D141G s 5' GC GCC TCA GGC TAC GGC CGG GTT ATT GC 3'  
 PRIMER S140Y/D141G as 3' CG CGG AGT CCG ATG CCG GCC CAA TAA CG 5'  
 A S G Y<sub>140</sub> G<sub>141</sub> R V I A

FIG. 14a-2

**PRIMER SET L**

PRIMER S130N s 5' CTG GCG CGC AAT GTG GTG CCG TTT ATT C 3'  
PRIMER S130N as 3' GAC CGC GCG TTA CAC CAC GGC AAA TAA G 5'  
L A R N<sub>130</sub> V V P F I

**PRIMER SET M**

PRIMER R129L/S130N s 5' GCT CTG GCG CTC AAT GTG GTG CCG TTT ATT C 3'  
PRIMER R129L/S130N as 3' CGA GAC CGC GAG TTA CAC CAC GGC AAA TAA G 5'  
A L A L<sub>129</sub> N<sub>130</sub>V V P F I

**PRIMER SET N**

PRIMER K167G/R168Q s 5' GAC CAT GGC TCC GGA CAA GCT ACG CCA G 3'  
PRIMER K167G/R168Q as 3' CTG GTA CCG AGG CCT GTT CGA TGC GGT C 5'  
D H G S G<sub>167</sub> Q<sub>168</sub>A T P

**FIG. 14a-3**

**PRIMER SET O**  
 FumG27-s 5'- CTA GGG TAC CAG TGC TCC CCT GCG ACT TCT CAT CTA TGG GGC GGA TAC TCG CCA TTC TTT TCG C - 3'  
 FumG27-as 3'- CC ATG GTC ACG AGG GGA CGC TGA AGA GTA GAT ACC CCG CCT ATG AGC GGT AAG AAA AGC GAG CT - 5'

**PRIMER SET P**  
 FumV27-s 5'- CTA GGG TAC CAG TGC TCC CCT GCG ACT TCT CAT CTA TGG GGC GTG TAC TCG CCA TTC TTT TCG C - 3'  
 FumV27-as 3'- CC ATG GTC ACG AGG GGA CGC TGA AGA GTA GAT ACC CCG CAC ATG AGC GGT AAG AAA AGC GAG CT - 5'

**PRIMER SET Q**  
 FumN27-s 5'- CTA GGG TAC CAG TGC TCC CCT GCG ACT TCT CAT CTA TGG GGC AAC TAC TCG CCA TTC TTT TCG C - 3'  
 FumN27-as 3'- CC ATG GTC ACG AGG GGA CGC TGA AGA GTA GAT ACC CCG TTG ATG AGC GGT AAG AAA AGC GAG CT - 5'

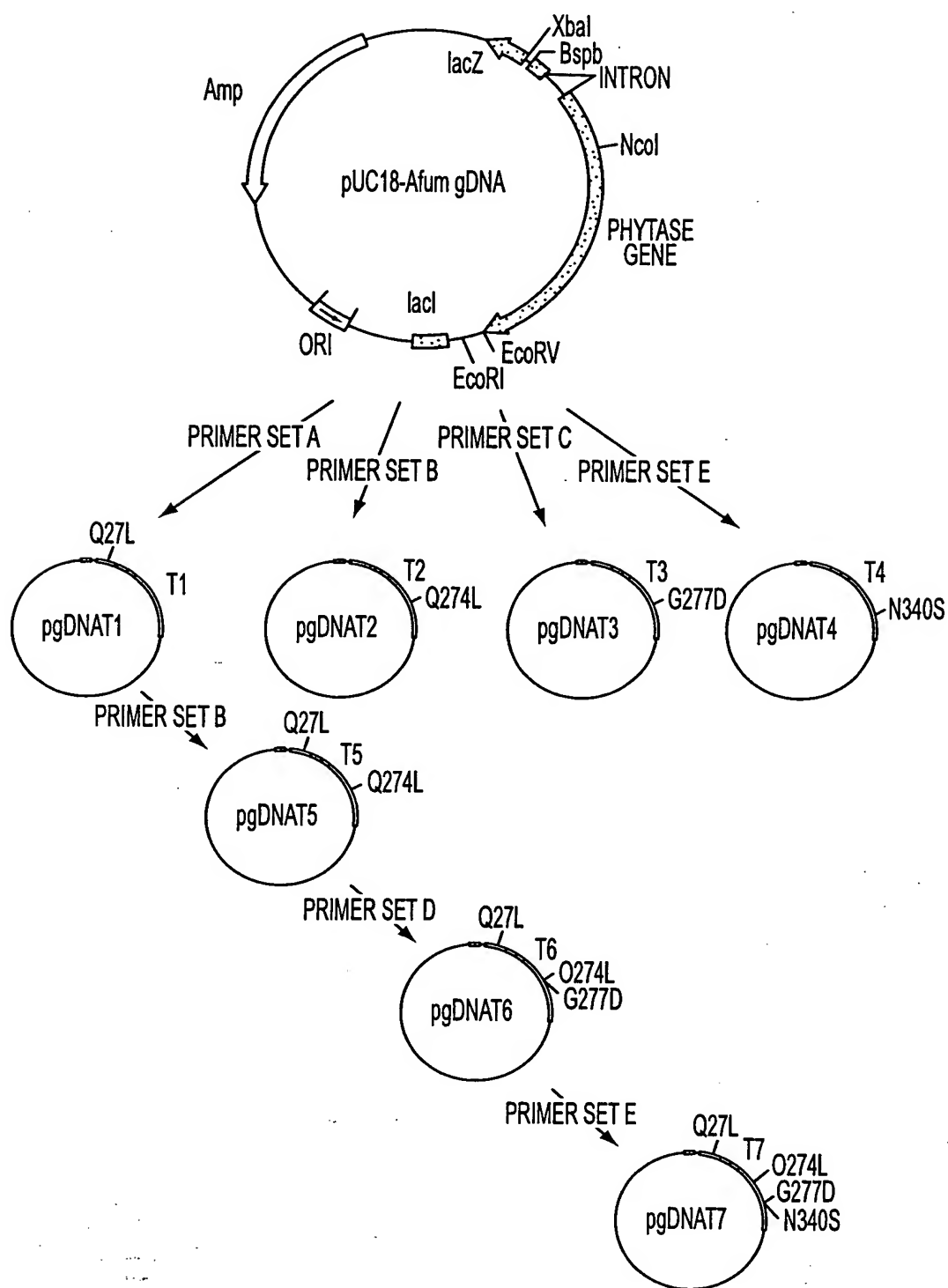
**PRIMER SET R**  
 FumI27-s 5'- CTA GGG TAC CAG TGC TCC CCT GCG ACT TCT CAT CTA TGG GGC ATC TAC TCG CCA TTC TTT TCG C - 3'  
 FumI27-as 3'- CC ATG GTC ACG AGG GGA CGC TGA AGA GTA GAT ACC CCG TAG ATG AGC GGT AAG AAA AGC GAG CT - 5'

**PRIMER SET S**  
 FumA27-s 5'- CTA GGG TAC CAG TGC TCC CCT GCG ACT TCT CAT CTA TGG GGC GCG TAC TCG CCA TTC TTT TCG C - 3'  
 FumA27-as 3'- CC ATG GTC ACG AGG GGA CGC TGA AGA GTA GAT ACC CCG CGC ATG AGC GGT AAG AAA AGC GAG CT - 5'

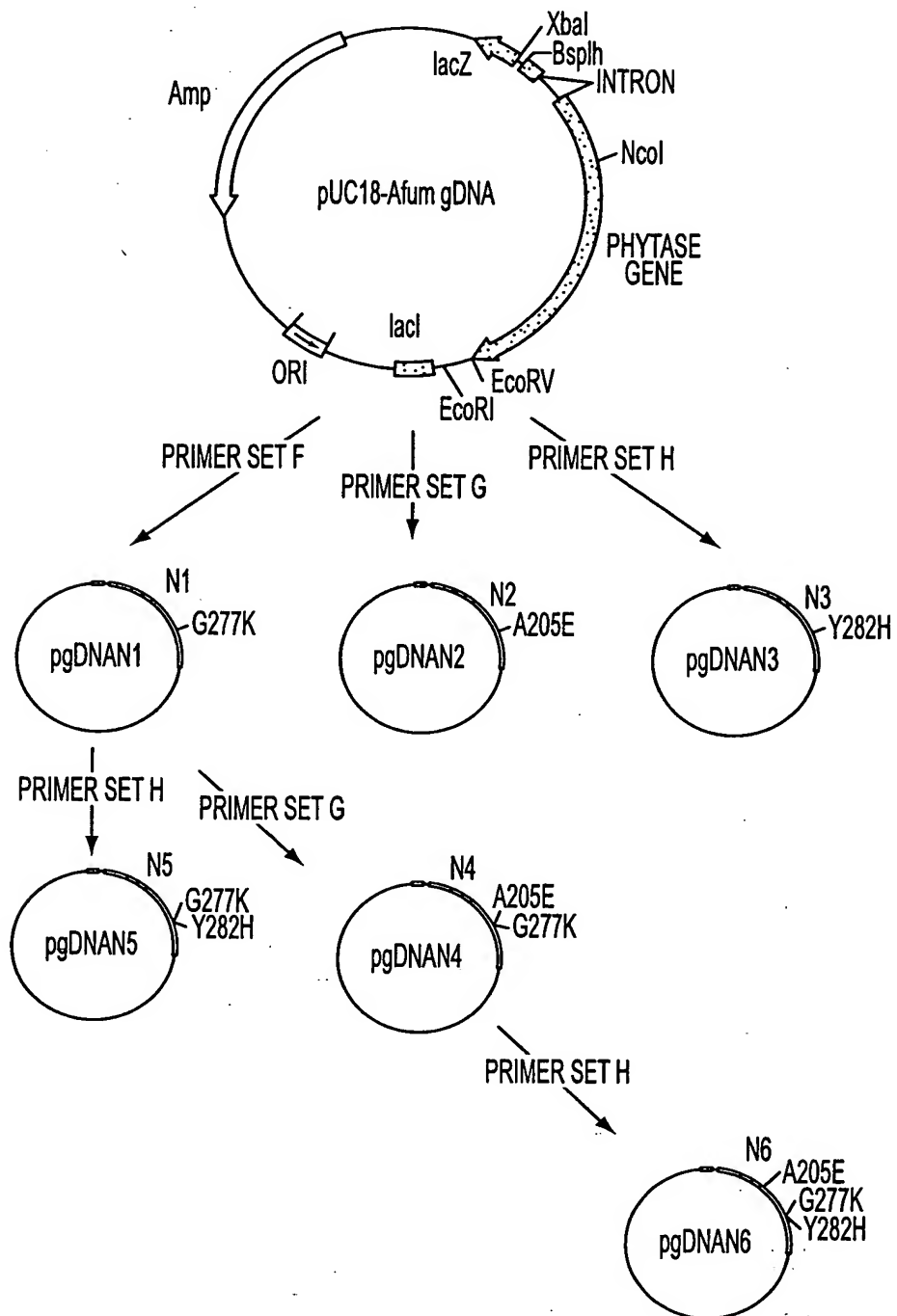
**PRIMER SET T**  
 FumT27-s 5'- CTA GGG TAC CAG TGC TCC CCT GCG ACT TCT CAT CTA TGG GGC ACG TAC TCG CCA TTC TTT TCG C - 3'  
 FumT27-as 3'- CC ATG GTC ACG AGG GGA CGC TGA AGA GTA GAT ACC CCG TGC ATG AGC GGT AAG AAA AGC GAG CT - 5'

FIG. 14b

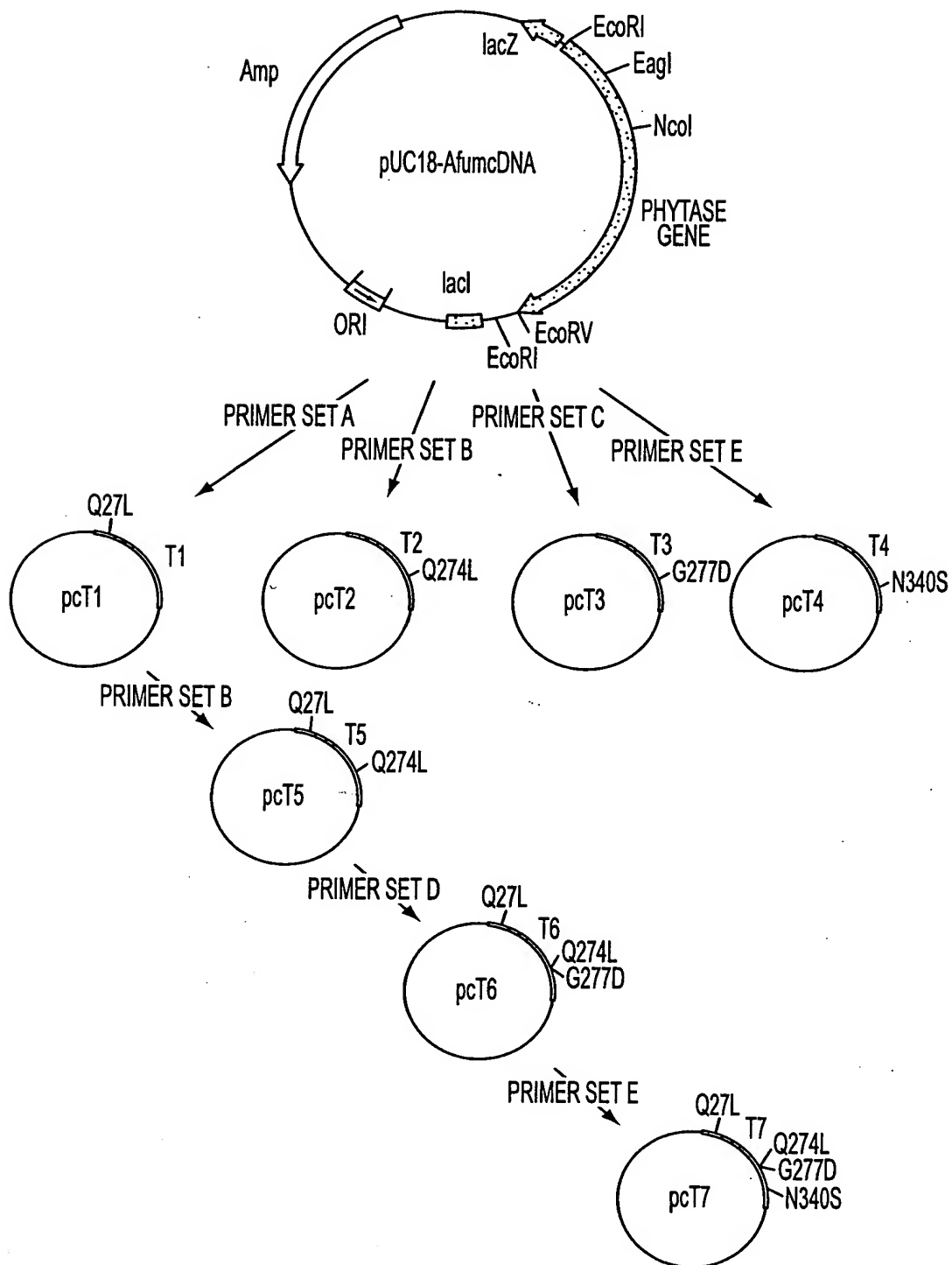




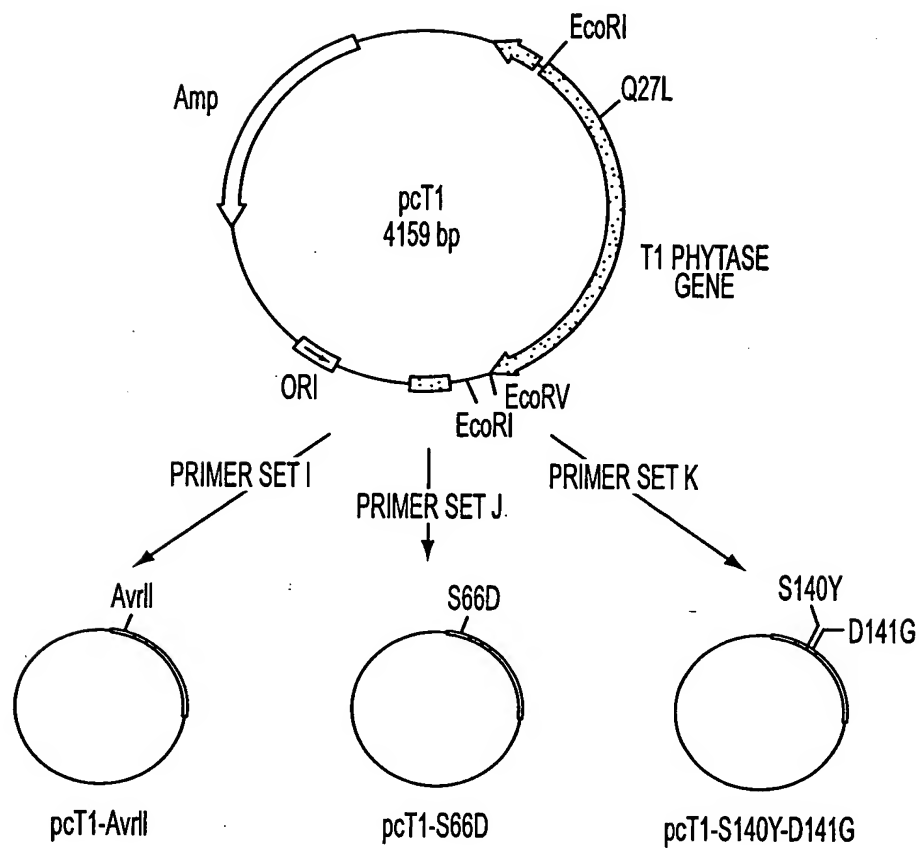
**FIG. 15**



**FIG. 16**



**FIG. 17a**



**FIG. 17b**

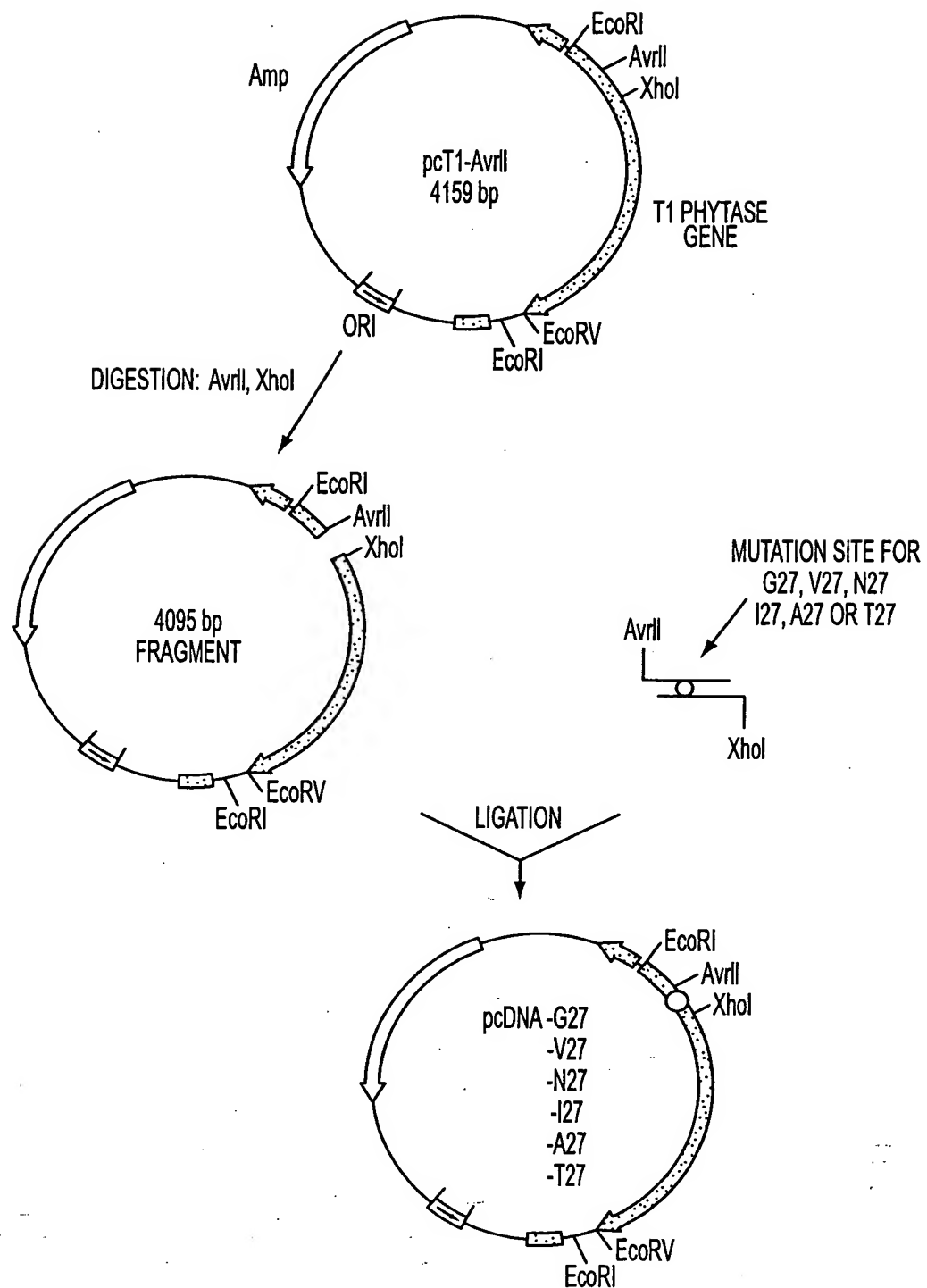
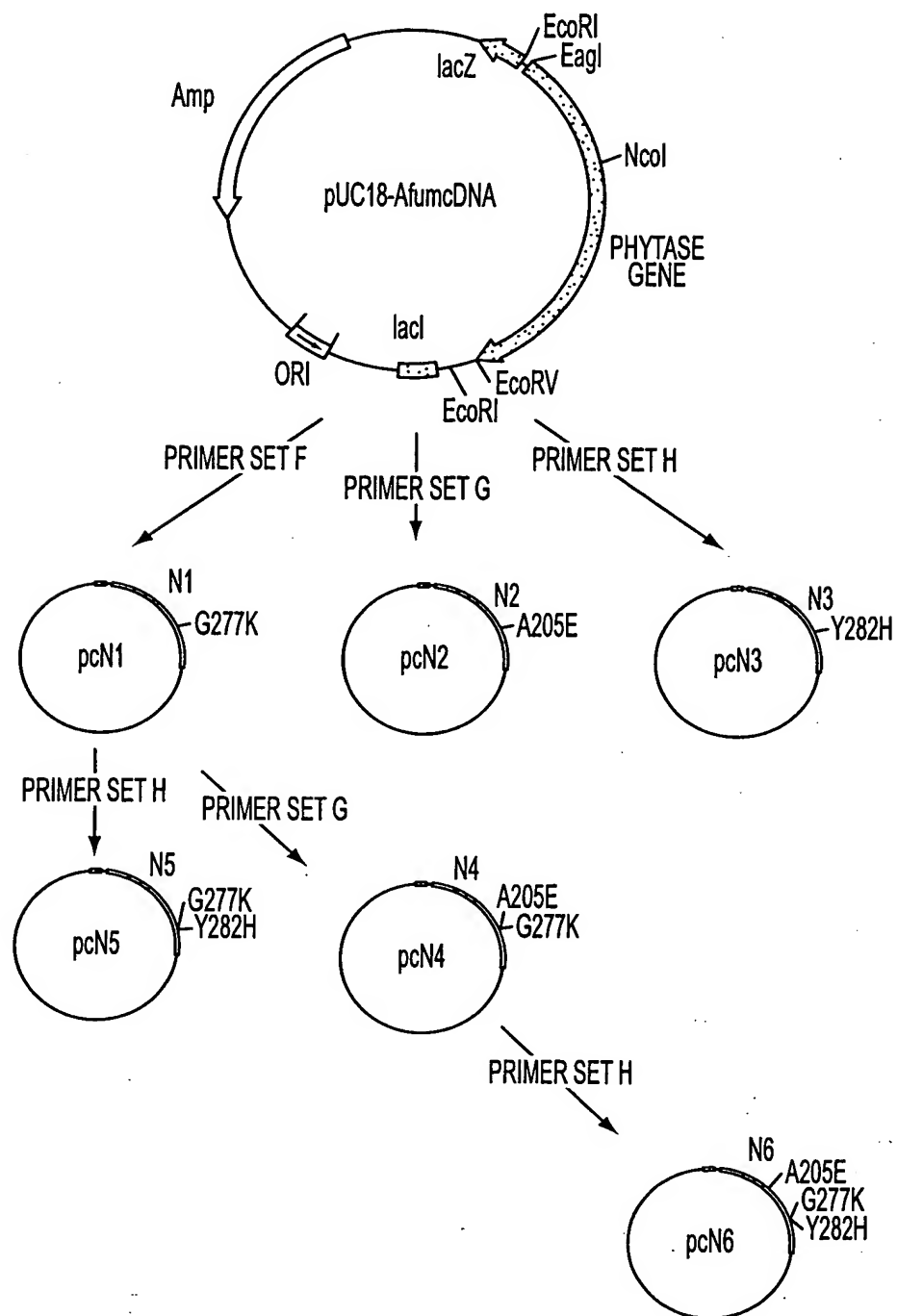


FIG. 17c



**FIG. 18**

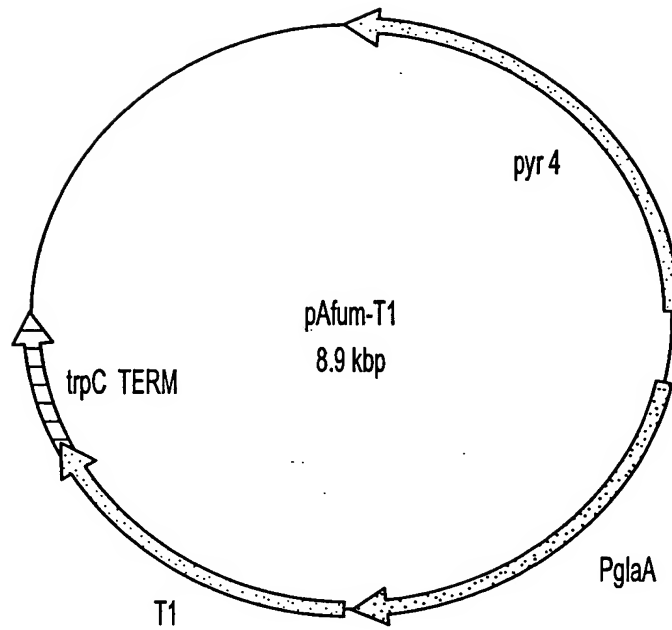


FIG. 19

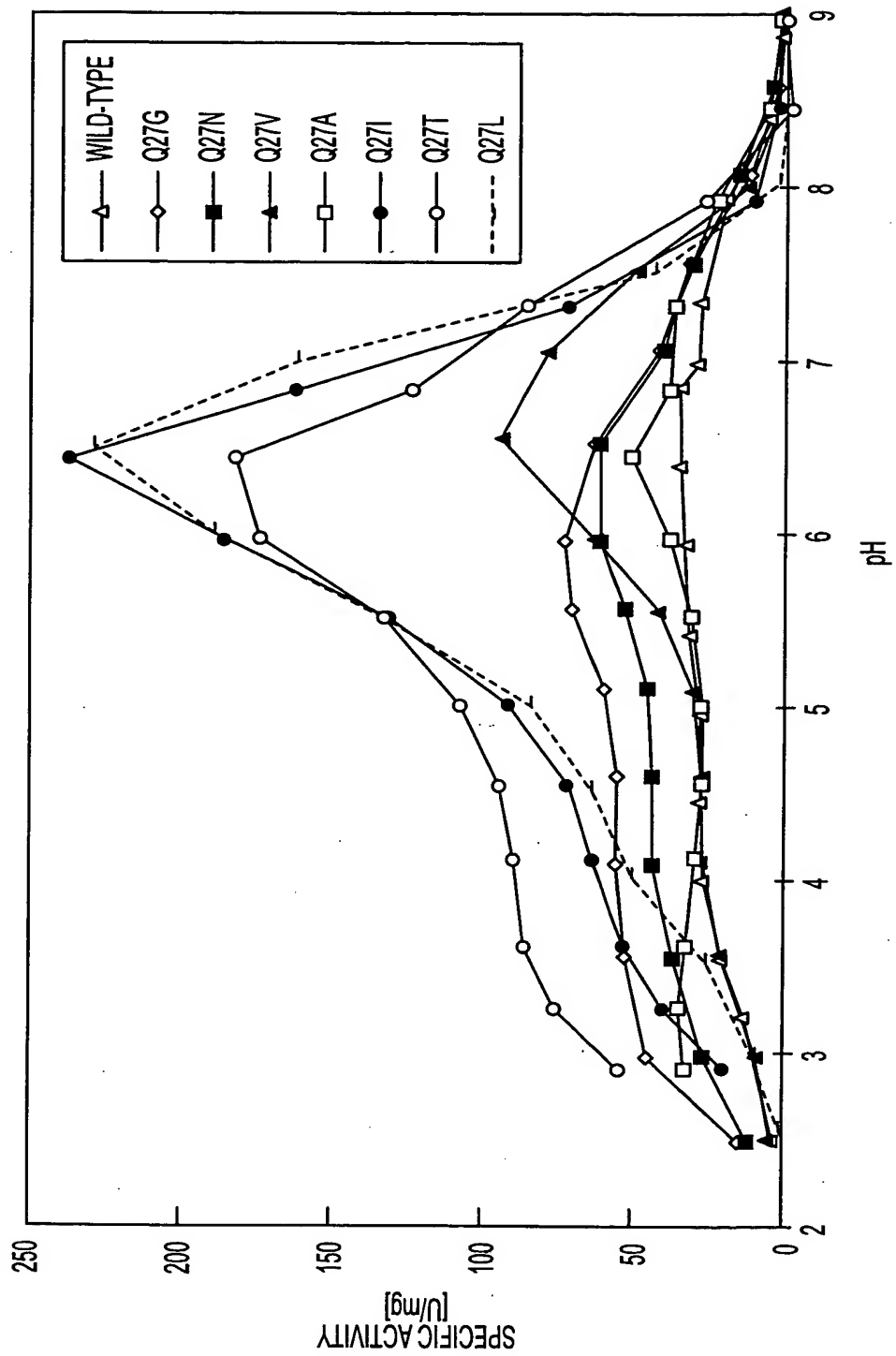


FIG. 20



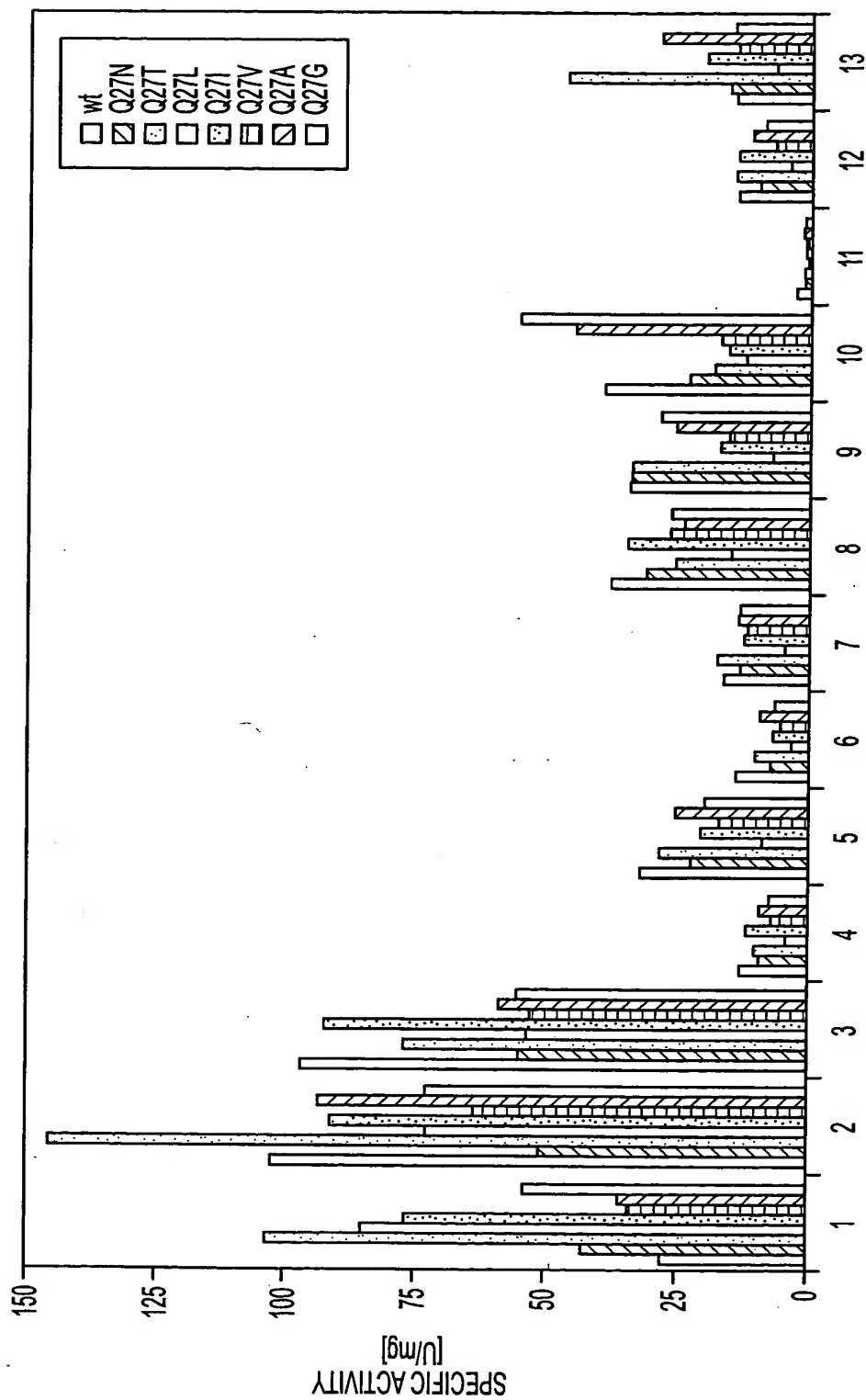


FIG. 21

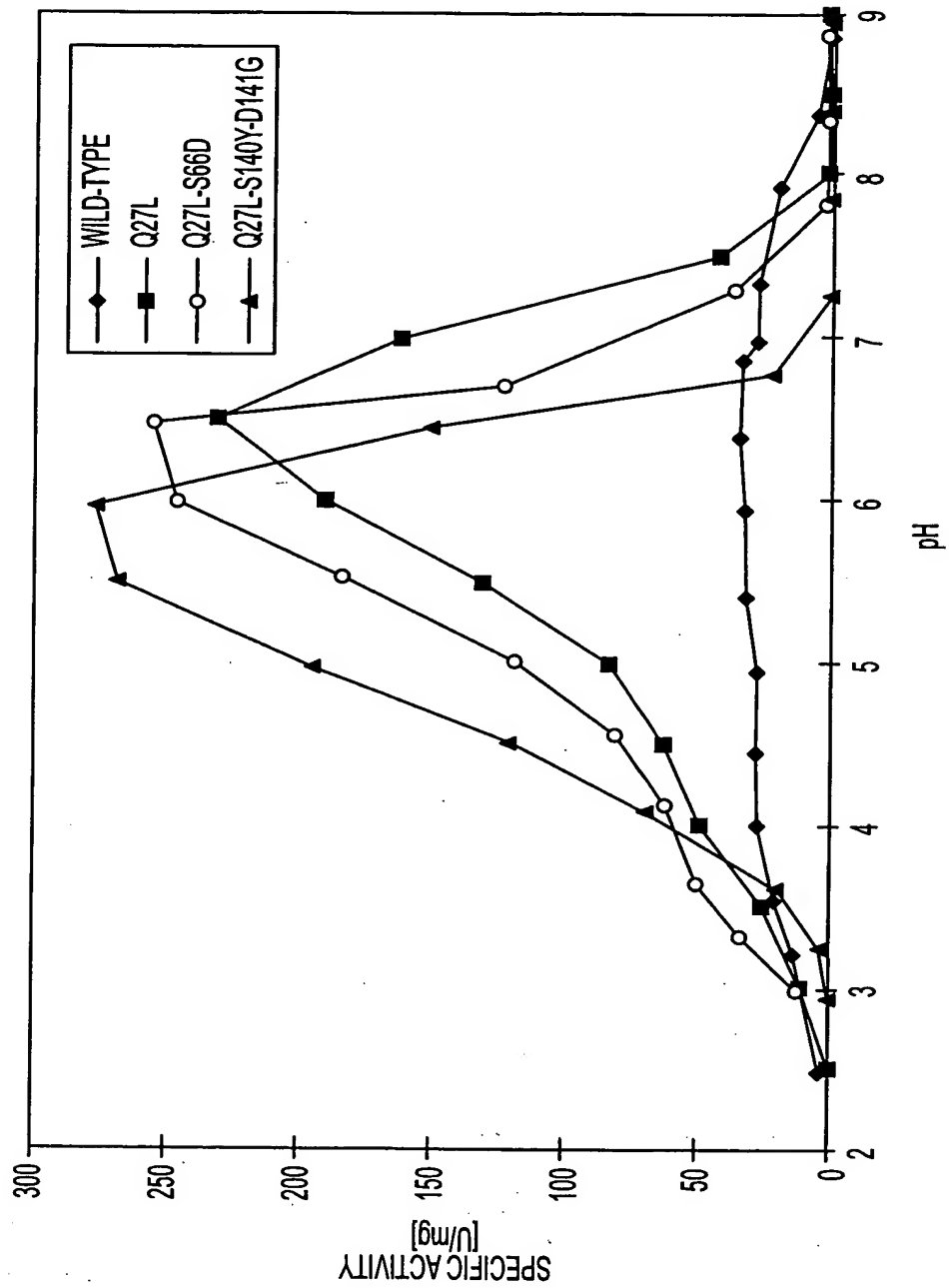


FIG. 22

|         |                                   |   |
|---------|-----------------------------------|---|
| 1       | 80                                |   |
| #13073  | MVTLTFLLSA                        | AVLLSGRVSA APSS-----A GSKSCDTVDL GYQCSPATSH LWQYSPFFS LEDELSVSSK LPKDCRITLV |
| ✓#32722 |                                   | .....   |
| ✓#58128 |                                   | .....   |
| ✓#26906 |                                   | .....   |
| ✓#32239 | GA.....V M.....-AG                | .....GCSAGS ...A...E. ....G... ..D .....V.F.                                |
| 81      | 160                               |   |
| #13073  | QVLSRHGARY                        | PTSSKSKYYK KLVTAIQANA TDFKGFAPL KTYNYTLGAD DLTPFGEQQL VNSGIKFYOR YKALARSVVP |
| #32722  |                                   | .....   |
| #58128  |                                   | .....   |
| #26906  |                                   | .....   |
| #32239  | .....A.....K..                    | E.....E.....M .....K .....G.....  |
| 161     | 240                               |   |
| #13073  | FIRASGSDRV                        | IASGEKFIEG FQQAKLADPG ATNRAAPAIS VIIPSETFN NTLDHGVCTK FEASQLGDEV AANFTALFAP |
| #32722  |                                   | .....   |
| #58128  |                                   | .....   |
| #26906  |                                   | .....   |
| #32239  | ...S.....NV.....V.....Y.....S...N | .....E.....E.....   |
| 241     | 320                               |   |
| #13073  | DIRARAETHL                        | PGVTLTDEDV VSLMDMCSFD TVARTSDASQ LSPFCQLFTH NEWKKYNYLQ SLGKYGYGA GNPLGPAQGI |
| #32722  |                                   | .....   |
| #58128  |                                   | .....   |
| #26906  | .....K.....                       | .....   |
| #32239  | A....I....Q...D..                 | .....A...E .....AI... ..D.....  |

FIG. 23-1

**FIG. 23-2**

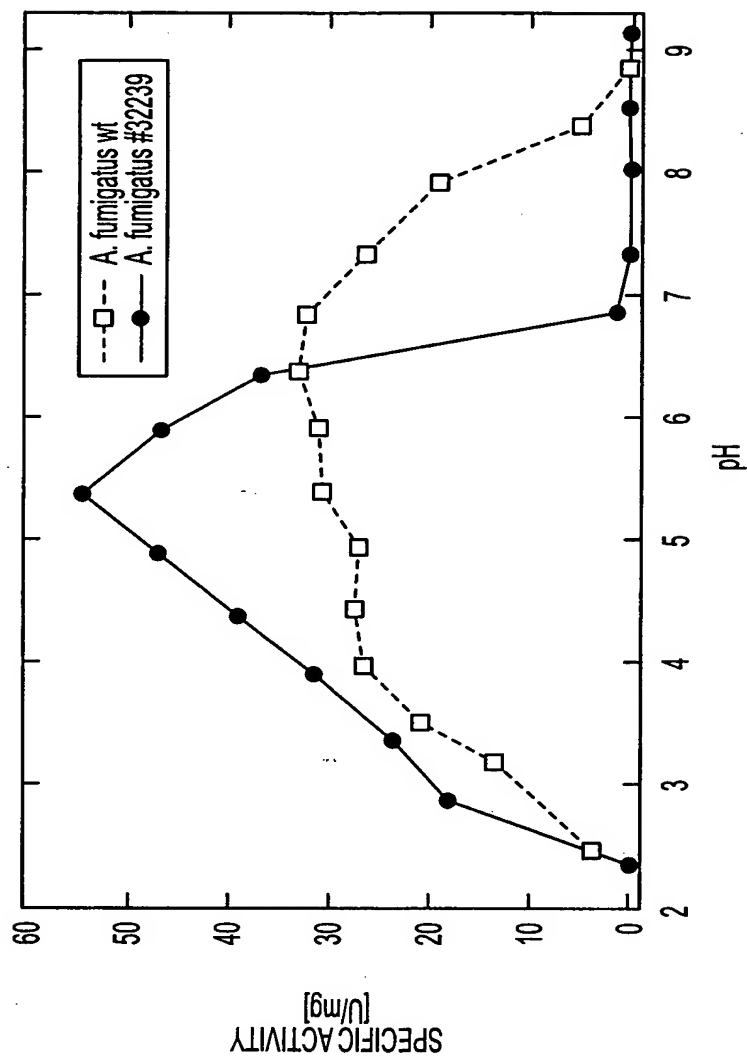


FIG. 24

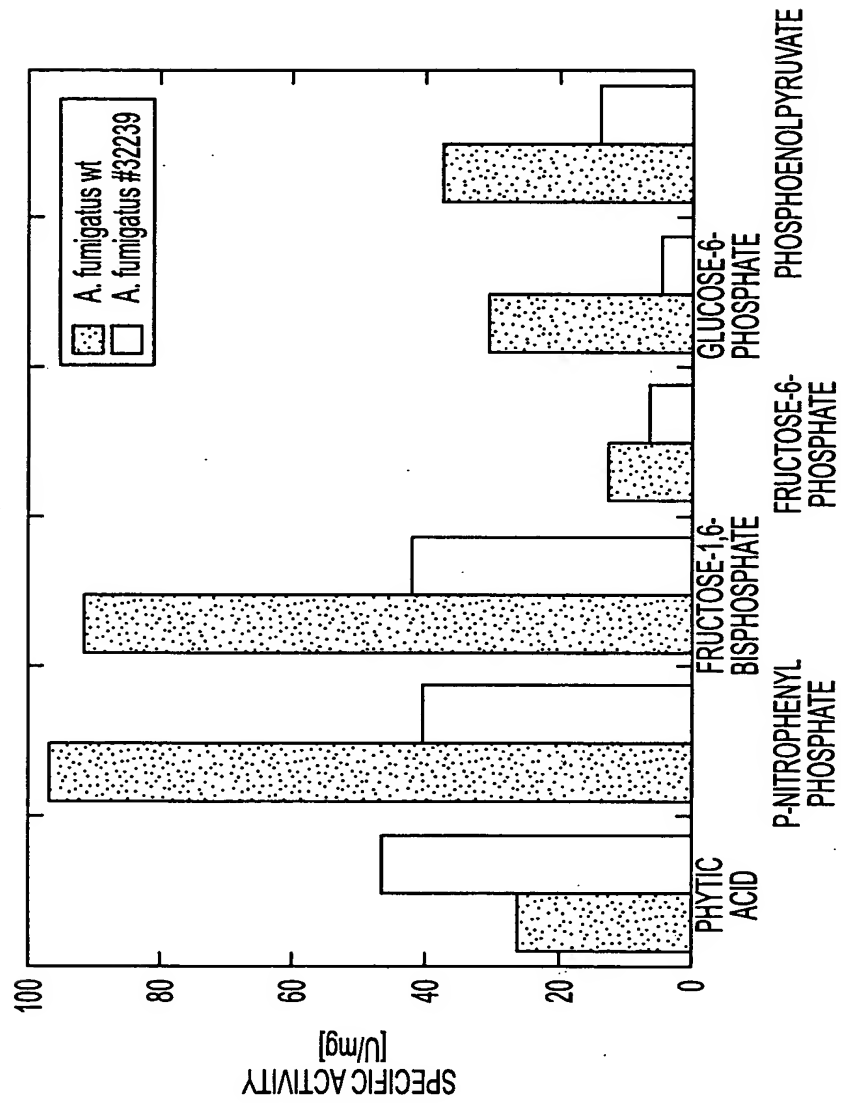
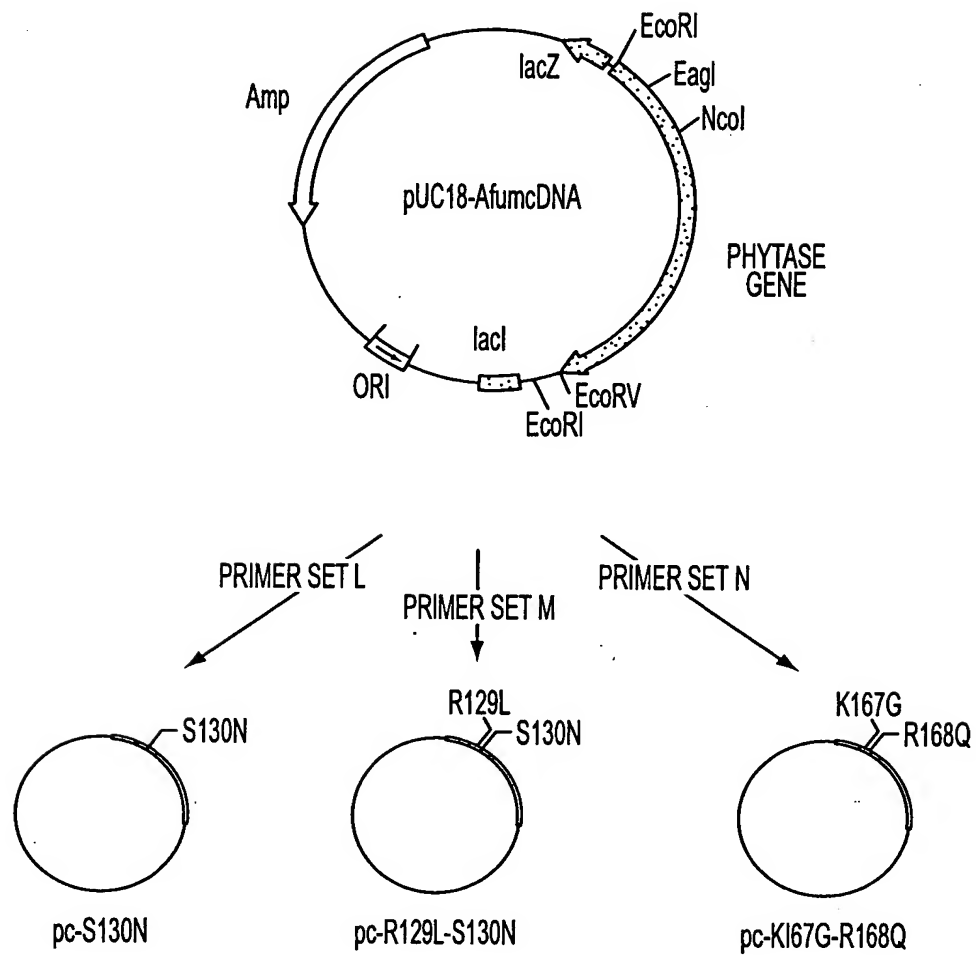


FIG. 25



**FIG. 26**